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## WINTER PLUMAGES:—ILLUSTRATED BY THE ROSE-BREASTED GROSBEAK (*ZAMELODIA LUDOVICIANA*).


BY WITMER STONE.


*Plate IV.*

ON THE accompanying plate Mr. Fuertes has represented the male of the well known Rose-breasted Grosbeak in the plumage of the first winter, a condition often known as the 'bird of the year,' and also the winter plumage of the fully adult bird of two years or more.

The differences are not very obvious at first sight but will be found to be greater upon more minute examination, though they are probably more striking in the specimens themselves than in a plate where the figures are necessarily reduced.

Corresponding differences are exhibited by young and old winter specimens of a number of our common birds, and the subject is one of considerable interest.

In April, 1896, the writer published a paper on the 'Molting of Birds,' in which the seasonal plumages were tabulated, and in the last number of 'The Auk' Dr. Dwight has published a scheme identical with the above except that he proposes the term 'Juvenal' for what was formerly known as the 'First Plumage'; and adds an earlier stage, the 'Natal Down' which was not considered in the former paper.

In both the articles referred to, attention is called to the difference in the winter plumages of birds, due to age. Some species also exhibit corresponding differences in the spring or nuptial plumage, but this is not so common.

The most interesting point in connection with these winter plumages is the apparent scarcity of adult birds during the fall migration. This has frequently been noticed, especially by Mr. C. W. Beckham,[1] and has been generally considered to be due to the earlier migration of the old birds and the probability that they travel more rapidly or with fewer stops.

In the case of the Rose-breasted Grosbeak, I examined the fall specimens in the collections of the Academy of Natural Sciences of Philadelphia, the American Museum of Natural History, the U. S. National Museum, and the private collections of Mr. William Brewster and several others, and while birds in the 'First Winter' plumage were abundant I found only two[2] in the 'Adult Winter' plumage.

The scarcity of these adult specimens has caused a difference of opinion as to the character of the adult winter plumage of several species, and even to-day authorities are divided upon the question of the winter plumage of so familiar a species as the Black-bellied Plover (*Squatarola squatarola*), some claiming that the adults are nearly identical with the first year birds in winter, while others state that they are always more or less black beneath, as in spring.

Such black-bellied specimens are certainly taken in fall but they are rare and are regarded by the former of the above 'schools' as exceptional plumages!

The Rose-breasted Grosbeak exhibits about as great a variety of plumages as is to be found among our passerine birds. It seems to molt regularly twice a year, though the spring molt is usually confined to the body plumage.

The adult in winter as shown in the plate differs from the 'First Winter' plumage in the greater amount of black above and rose

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[1] Auk, 1887, p. 79.

[2] Three others in this plumage were examined, taken in winter south of the United States.

beneath, and in the jet black instead of brown remiges and rectrices. After the spring molt both adult and first year birds appear in the familiar black, white and pink nuptial plumage, but, as in the early spring Bobolink, the tips of the feathers are often bordered with brown, which is lost through abrasion by the time the bird reaches its nesting ground. Even in the nuptial plumage the old and young birds can still be separated by the color of the flight feathers, which remain just as before the molt.[1]

With this outline of the plumages of the Rose-breast, it is interesting to see what our standard works have to say on the subject. In not a single one is there anything to indicate that the adult male has a winter plumage in any way different from the well-known spring dress! In Ridgway's 'Manual' the adult winter plumage is apparently described as the 'First Winter' plumage, as it is stated that "the wings and tail are as in the adult male." In Coues 'Key' we are led to believe that the young male does not acquire the rose color beneath the wings until the first full plumage is acquired.

In the British Museum Catalogue,[2] however, we find the most remarkable statement. Dr. Sharpe evidently had winter birds of various ages before him and in the absence of molting specimens fell back upon the famous color change theory as a solution of the question.

The First Winter plumage is first described and then he adds: "The slight tinge of rose-colour on the breast of the young male greatly develops when the bird is in its winter-quarters, and the streaks on the breast and throat gradually disappear as the red colour spreads upwards, and the adult plumage appears to be gained by a change of feather and not by any moult. As the black spreads on the upper surface the streaks disappear, and at last the ochreous-brown colour, which is characteristic of the young bird, remains only in the shape of edgings to the mantle, back and scapulars," etc. He further states that he has seen no specimen which proves to his satisfaction that the old male has a

[1] The first year bird, however, often molts his tail in spring along with the body feathers so that in the 'First Nuptial' plumage, the tail is often black while the wings are brown.

[2] Vol. VII, p. 60.

distinct winter plumage, and that in young birds at least, the wing quills are apparently molted in spring!

I need only say that the lower figure of our plate, which represents the adult winter plumage, and which is evidently the condition described by Dr. Sharpe as showing the expansion of the pink, was drawn from a bird secured in Illinois, Sept. 1871, far north of its winter quarters, while another in Mr. Brewster's collection, taken in Oxford Co., Maine, Aug. 20, is actually in the midst of the molt from the brown-winged pink and white 'First Nuptial' plumage to the adult winter plumage here figured.

This clearly illustrates the lack of accuracy with which seasonal plumages are described in our works of reference, and I may say that the Rose-breasted Grosbeak is not alone in this treatment.

The moral seems to be that in the present advanced condition of American ornithology, when we are splitting hairs in the matter of geographical subspecies, it is high time that each plumage that a bird assumes should be properly understood and described, and more attention given to one of the most interesting branches of ornithological science.

## NOTES ON SOME OF THE RARER BIRDS OF WESTERN PENNSYLVANIA.

BY S. N. RHOADS.

DATA for the following observations was secured during several excursions which I have made in the western half of Pennsylvania since June 1, 1894. In the main these notes were taken during field work in the interests of the Carnegie Museum of Pittsburgh from April to October, 1898. Some of the most valuable records are based on specimens in the Carnegie Museum taken by local collectors. I am also indebted to Mr. J. Link of Mt. Washington, Pittsburgh, for the privilege of an examination of rare specimens in his private collection. Mr. Seth Nelson of Round Island, Clinton Co., Mr. M. Larrabee of

Emporium, Cameron Co., and Mr. D. A. Atkinson of Pittsburgh have also furnished some valuable notes, the data kindly given by Mr. Atkinson being of especial value.

Some of these notes merely confirm records already published for the State in Dr. Warren's 'Birds of Pennsylvania' and Mr. Stone's 'Birds of Eastern Pennsylvania and New Jersey,' but are valuable in tracing the distribution and breeding areas of little known species.

**Colymbus holbœlli**. HOLBŒLL'S GREBE. — "One taken by me in Allegheny Co., March 17, 1895." *Atkinson.*

**Podilymbus podiceps**. PIED-BILLED GREBE. — One seen above the wing-dam at the head of Six-mile Island, Allegheny River, Pittsburgh, in early August, indicates this bird to be a breeder in Allegheny County.

**Larus argentatus smithsonianus**. AMERICAN HERRING GULL. — Frequently noted during migrations along the water courses; often following these far up the smaller mountain streams. "Ohio, Allegheny and Monongahela Rivers, Pittsburgh." *Link.* Sinnemahoning Creek, Clinton and Emporium Counties. *Nelson* and *Larrabee.*

**Larus delawarensis**. RING-BILLED GULL. — The notes above made for *smithsonianus* apply in large measure to this bird.

**Larus philadelphia**. BONAPARTE'S GULL. — A few seen on the Sinnemahoning. *Larrabee.*

**Sterna hirundo**. COMMON TERN. "One taken on the Allegheny River, Oct. 8, 1892." *Atkinson.*

**Sterna sp.?** TERN. — "In some spring migrations, see three or four." Cameron Co. *Larrabee.*

**Anas obscura**. BLACK DUCK. — "Rare in Cameron Co." *Larrabee.*

**Anas carolinensis**. GREEN-WINGED TEAL. — "Much rarer than the Blue-winged Teal." *Larrabee.* "One taken at Homestead, Allegheny Co., Oct. 30, 1894." *Atkinson.*

**Aythya americana**. REDHEAD. — "Only one taken at Emporium in the last 20 years." *Larrabee.*

**Aythya vallisneria**. CANVAS-BACK. — "Taken at Tarentum, Nov. 26, 1893." *Atkinson.*

**Erismatura rubida**. RUDDY DUCK. — "Rare at Emporium." *Larrabee.*

**Anser albifrons gambeli**. AMERICAN WHITE-FRONTED GOOSE. — "One shot in Allegheny Co., Nov. 28, 1895." *Atkinson.*

**Olor sp.?** SWAN. — Two seen on the Susquehanna River at Keating in spring of 1896." *Nelson.* "In 1886 one was taken on the West Branch in Clearfield County." *Nelson.*

**Botaurus lentiginosus**. AMERICAN BITTERN. — "Occasionally in

Allegheny Co." *Link.* A pair noted breeding at Hookstown, Beaver Co. "Taken at Emporium." *Larrabee.*

**Botaurus exilis.** LEAST BITTERN. — One taken near Pittsburgh several years ago after a great storm. *Link.*

**Fulica americana.** AMERICAN COOT. — "A few noted at Emporium." *Larrabee.* "Bellevue, Allegheny Co., September 11, 1968." *Atkinson.*

**Tringa minutilla.** LEAST SANDPIPER. — Occasionally during migrations along the Ohio River and its larger tributaries. *Link.* Two specimens taken May 18 near Pittsburgh in the Carnegie Museum.

**Ereunetes pusillus.** SEMIPALMATED SANDPIPER. — Now and then taken along the Ohio below Vanport, Beaver Co. *Link.*

**Calidris arenaria.** SANDERLING. — Davis Island, Pittsburgh, April 21, 1894." *Atkinson.*

**Totanus melanoleucus.** GREATER YELLOW-LEGS. — Occasionally stopping in the vicinity of Pittsburgh during migrations. One taken on Davis Island in August, 1898, after a cyclone. *Link.* "Rare at Emporium." *Larrabee.*

**Totanus flavipes.** YELLOW-LEGS. — "Taken on Neville Island, Allegheny Co., Sept. 16, 1896." *Atkinson.*

**Totanus solitarius.** SOLITARY SANDPIPER. — The late date at which one of these was noted at Beaver coincides with Mr. W. E. C. Todd's statement that they breed in the County.

**Charadrius squatarola.** BLACK-BELLIED PLOVER. — "Taken on Neville Island, Allegheny Co., Apr. 26, 1894. *Atkinson.*

**Meleagris gallopavo.** WILD TURKEY. — Practically exterminated in the southwestern part of Pennsylvania. A few linger in Clinton County. A flock of twenty or more were seen near Keating in that County early in November, 1898. "Four were killed near Lock Haven on Queen's Run a few years ago. Near Flemington Wagner saw 27 in one flock." *Nelson.* I came upon a flock of newly hatched young with dam on the summit of Tuscarora Mountain, Fulton Co., in June, 1889.

**Colinus virginianus.** BOB-WHITE. — "Never saw one at Emporium in 20 years' residence." *Larrabee.* "Exterminated: one seen this spring at Round Island." *Nelson.*

**Ectopistes migratorius.** PASSENGER PIGEON. — Three western Pennsylvania specimens are in the Carnegie Museum. One from Washington County, shot 18 years ago, and two from Erie County, presented by Mr. Geo. B. Sennett. No recent records of the appearance of this Pigeon were secured. "In 1892 three flocks were seen in Potter County. Twenty years since any were seen at Round Island." *Nelson.* "Seven years since any were seen in this vicinity (Emporium). They nested fourteen years ago in a beechwood tract on the line between Cameron and McKean Counties." *Larrabee.*

**Cathartes aura.** TURKEY VULTURE. — A rare straggler into western Pennsylvania north of Pittsburgh. I saw one at Beaver in May, 1898. "Never seen in the region of Emporium." *Larrabee.* "Very rare; have seen one near Round Island." *Nelson.*

**Aquila chrysaëtos.** GOLDEN EAGLE. — "Two taken in Cameron County, one in March, 1892, the other in March, 1894." *Larrabee.*

**Pandion haliæëtus carolinensis.** AMERICAN OSPREY. — The comparative rarity of this bird during the breeding season in the mountain districts makes the following note worthy of record: — "One nested in the mountains near Round Island somewhere along Cook's Run." *Nelson.*

**Strix pratincola.** AMERICAN BARN OWL. — The scarcity of extensive marshes and bottomlands in western Pennsylvania is probably the cause of the reputed scarcity of this bird in that region. "Very rare, I never saw one in the flesh." *Link.*

**Nyctala tengmalmi richardsoni.** RICHARDSON'S OWL. — A specimen of this extremely rare bird is in the Carnegie Museum collection. It was taken by the donor, Mr. D. A. Atkinson, in Allegheny County, March 12, 1896. Mr. Atkinson, mistaking its identity, had labeled it Acadian Owl. There are no previous records of the occurrence of this Owl in Pennsylvania known to me.

**Nyctala acadica.** SAW-WHET OWL. — Not rare in the mountains. "South Side Cemetery, Pittsburgh." *Link.*

**Nyctea nyctea.** SNOWY OWL. — "Several sent to me from Baily's Run, Cameron Co., in 1893." *Larrabee.*

**Ceophlœus pileatus.** PILEATED WOODPECKER. — Rare, even in the wilder mountain regions, perhaps owing to the almost complete destruction of dense virgin timber. I heard only one near Laughlintown, Westmoreland Co., during a month's stay. One was noted in Clinton Co. during six weeks camping and tramping on the mountains near Round Island.

**Melanerpes carolinus.** RED-BELLIED WOODPECKER. — "Rare; only seen in the nut season in Allegheny Co." *Link.* "Very rare: one taken near Emporium in May, 1894." *Larrabee.*

**Empidonax flaviventris.** YELLOW-BELLIED FLYCATCHER. — Two taken at Beaver, May 21, 1898, are in the Carnegie Museum.

**Empidonax acadicus.** ACADIAN FLYCATCHER. — Only one specimen of this common eastern species was noted. It was seen at Laughlintown in June.

**Otocoris alpestris praticola.** PRAIRIE HORNED LARK. — I was much surprised to find the Horned Lark breeding in the suburbs of Pittsburgh. A family of six in Schenley Park, were frequently noted, feeding along the Park drives. Mr. Link has also taken young in summer at Riley's Ford, Allegheny Co. I was informed by a local collector that it also breeds in Beaver and Butler Counties. None were noted in Westmoreland County during my stay. Mr. Atkinson informs me that he found a nest and four young of this species in the oval of the Schenley Park Race Track. The nest is in the Carnegie Museum.

**Corvus corax sinuatus.** AMERICAN RAVEN. — One seen during stay in Clinton Co., Oct., 1898. Nelson says they invariably appear where offal is left by the deer and bear hunters in winter.

**Dolichonyx oryzivorus**. BOBOLINK. — To an east Pennsylvanian the frequent instances of the breeding of this bird in the State west of the Alleghenies are both a surprise and a pleasure. They seem to be summer residents in favorable situations in most of the southwestern counties visited by me. In no place could they be called abundant. "They breed in the Potter County meadows." *Larrabee.*

**Xanthocephalus xanthocephalus**. YELLOW-HEADED BLACKBIRD. — "One taken in a flock of Redwings, Apr. 26, 1895, in Allegheny Co." *Atkinson.*

**Pinicola enucleator**. PINE GROSBEAK. — I examined winter specimens taken near Emporium in Mr. Larrabee's collection. "Allegheny Co., Jan. 14, 1898." *Atkinson.*

**Loxia curvirostra minor**. AMERICAN CROSSBILL. — Breeding in the Clinton County mountains. "Allegheny Co., Jan. 14, 1898." *Atkinson.*

**Spinus pinus**. PINE SISKIN. — Breeding in the mountains of the northwest counties.

**Ammodramus sandwichensis savanna**. SAVANNA SPARROW. — This species was noted singing along the roadside near Bedford Springs in Bedford County, in June, 1894.

**Chondestes grammacus**. LARK SPARROW. — An individual, from its actions evidently nesting, was seen on the road from Bedford Springs to Hyndman in Bedford County, in June, 1894. A fine specimen taken at Leetsdale, Allegheny Co., in May, 1898, is in the mounted collection of the Carnegie Museum.

**Junco hyemalis**. SLATE-COLORED JUNCO. — The following breeding records may be of value: — Laurel Ridge, two miles east of Laughlintown, Cresson and Summit, Cambria and Blair Counties. Round Island, Clinton Co.

**Melospiza georgiana**. SWAMP SPARROW. — A rarity. Two seen at Beaver in early May.

**Piranga rubra**. SUMMER TANAGER. — One was seen by Mr. Link in the South Side Cemetery, Pittsburgh, several years ago.

**Lanius ludovicianus**. LOGGERHEAD SHRIKE. — Two or three Allegheny County specimens are in the Carnegie Museum.

**Vireo solitarius**. BLUE-HEADED VIREO. — Breeding near Laughlintown, Cresson, Summit and Round Island.

**Protonotaria citrea**. PROTHONOTARY WARBLER. — "One taken in Allegheny Co., May 17, 1892." *Atkinson.*

**Helmitherus vermivorus**. WORM-EATING WARBLER. — One seen near Pittsburgh by Mr. Link.

**Helminthophila pinus**. BLUE-WINGED WARBLER. — I heard the song of one near Beaver in May, but none were seen there. On the foothills of Laurel Ridge, near Laughlintown, two or three pairs were found breeding. "One taken April 23, 1894, in Allegheny Co." *Atkinson.*

**Helminthophila chrysoptera**. GOLDEN-WINGED WARBLER. — The abundance of this rare eastern species in the breeding season in Allegheny, Beaver, and Westmoreland Counties was noticeable.

**Dendroica tigrina.** CAPE MAY WARBLER. — Mr. Link has seen seven examples of this species, some of which were taken in the Pittsburgh City limits. I examined two specimens in his collection taken there. "A specimen taken in Allegheny Co., Aug. 28, 1896." *Atkinson.*

**Dendroica cærulea.** CERULEAN WARBLER. — So far from this being a very rare bird, as in eastern Pennsylvania, it may be said to be numerous in the southwestern part of the State, where it breeds. I found it breeding in the vicinity of Pittsburgh, Beaver, and Ligonier, Westmoreland Co. It does not breed in the mountain districts of that County, however, none being seen at Laughlintown. It is a very loud and persistent songster.

**Geothlypis agilis.** CONNECTICUT WARBLER. — A male specimen was taken by Mr. Link, June 4, 1894. Another now in the Carnegie Museum was shot at Leetsdale, Allegheny Co., May 24, 1898, a female.

**Geothlypis philadelphia.** MOURNING WARBLER. — I found this bird breeding near Laughlintown; several pairs being noted on Laurel Ridge.

**Geothlypis trichas.** MARYLAND YELLOW-THROAT. — The great scarcity of this bird in Allegheny and Beaver Counties was a surprise to me. Only two were noted. A few were found breeding at Laughlintown.

**Sylvania mitrata.** HOODED WARBLER. — Two seen in May at Beaver. One singing male noted near Laughlintown in June. A specimen was taken at Leetsdale in May, 1898. They appear to be rare.

**Anthus pensilvanicus.** AMERICAN PIPIT. — The late spring and early August appearances of this bird in Beaver County noted by me suggest that it may be found breeding in the northwestern counties of Pennsylvania.

**Thryothorus bewickii.** BEWICK'S WREN. — In 1894 I discovered this bird breeding on the top of Tuscarora Mountain, Fulton County. One specimen was taken at Beaver, April 27, 1898. Two were recorded by me near Round Island, May 27, 1896.

**Cistothorus stellaris.** SHORT-BILLED MARSH WREN. — "One captured in Allegheny Co., May 4, 1894." *Atkinson.*

## AN EXAMPLE OF APTOSOCHROMATISM, AS INFLUENCED BY DIET, IN *MEGASCOPS ASIO.*

BY FRANCIS J. BIRTWELL.

IN THE following pages I shall attempt to detail an account of a very remarkable example of color change without moult or feather loss (Aptosochromatism); but unfortunately the results

are very incomplete. My intention had been to carry the investigation quite exhaustively into the departments of chemistry, physics and microscopy, feeling certain that each test and experiment would intensify the central feature of the subject, but discovering that I have acquired phthisis I am compelled to abandon all confining work and leave home for the West. My data, however, may be of assistance to some future worker, who with it, and his own, will be enabled to prove — what so many will not admit, and without full warrant — the repigmentation of a feather after it has assumed the mature condition. Under the circumstances, therefore, the incompleteness of the present paper will kindly be overlooked.

Anyone who has read Dr. Chadbourne's article (Auk, Oct., 1896, and Jan., 1897) upon this subject must have felt keen disappointment at the untimely death of the Owls upon which he was working, and it was largely to carry on the unfinished work, that I at once availed myself of the opportunity presented when some excitable Blue Jays betrayed to me the hiding place of a pair of Screech Owls, March 30, 1898.

The birds were readily taken home and introduced into a shed in which boxes were placed for sleeping and a small cedar tree for perching. The larger bird was in the extreme light gray phase of coloration, the smaller Owl being in the bright red condition. Only the gray bird lived, the other one dying twelve days later. On Dec. 30, 1898, another red bird was captured and placed with the first, but was promptly eaten, so I made no further attempts to obtain another. Both red birds were easily handled, but the marks of the bill and claws of the gray bird were present invariably upon my hands after each interview. By stroking the bird's head, however, I could cause it to close both eyes and fall into a state of apparently perfect oblivion from which the plucking of specimen feathers rarely aroused him, thus enabling me to make frequent and careful examinations of the plumage.

I endeavored to promote as natural conditions for my bird as possible — kept him in the loosely built shed at all times when the weather conditions could be as favorable for my purpose as possible, gave him a mouse or a Sparrow at frequent intervals to regulate him, and gave fresh water for drinking and bathing.

Upon certain occasions when it was difficult to obtain Sparrows or mice, I gave beef mixed with cotton wool which appeared to be perfectly acceptable. Food was given upon alternate days, usually about dusk, and an average of two ounces of food was given each time. Sometimes the bird would voluntarily fast for three and four days. For the major part of the time I conducted the feeding personally and when unable to do this had it carried on under strict orders. Each few days, cast off feathers were carefully sought for and a very limited number found, not enough for an average of three a week excepting during the moult of September, 1898, when a complete renewal ensued. By far, down feathers were shed in the greatest abundance, and the few contours found were, in the majority of cases, injured or abraded.

Thus once and for all we may dismiss any possibility of increased feather loss causing direct interference with my following remarks.

At this point it may be well to discuss briefly a few of the terms employed. A great deal of useless controversy has been expended over the comprehension of exact definitions, and it is my purpose to avoid this. Aptosochromatism and Ptosochromatism have been defined in my article on the 'Occurrence of Aptosochromatism in *Chrysotis levaillanti*' (Osprey, April, 1899), and as such will be employed here. 'Moult' is an exceedingly convenient term as defined by Dr. Chadbourne (Auk, April, 1897, p. 146) and is thus used. Ptosochromatism may be regarded as a restricted process of moulting, although the two terms are by no means synonymous. 'Color change,' unless modified by qualifying terms, refers exclusively to alterations of color or structure within the feather itself, due to vital causes within the feather organism.

From April 3 until the 12th (the birds fasting until the 3d) various kinds of food were given, the birds meanwhile becoming accustomed to their change of quarters, but after the last named date, a careful feeding of beef, lamb and chicken livers (and sometimes kidneys) was begun and maintained until May 27, 1898 — a period of 53 days. During this time about 46 ounces of liver and kidney were eaten and two or three Sparrows. As-

suming — as will later be considered — that the unnatural diet was the cause of the change which ensued, we may attribute the gain of additional color in the feathers of the gray bird, to the activity caused by 2 pounds and 14 ounces of the food during a period of 53 days.

As has been before stated, the plumage of the bird was light gray — a typical example of the extreme gray phase. At the time of the discontinuation of the liver diet the feathers of the breast were diffused with burnt sienna very prominently, which tinged the edges of the downy parts and colored the lower portions of the contour parts, while a narrow margin of the same color was present about the edges of the median stripe of black and its lateral branches. I noticed indications of the change as early as April 18, and friends commented upon the altered color of the bird, which was very noticeable from a short distance, April 26. The edges of the flight feathers were also affected and very pronouncedly the ear tufts. The back feathers will be considered later on.

My bird was next put upon a diet of raw beef and kept at it until Dec. 24, 1898 — a period of 211 days, during which the bird moulted completely once and consumed approximately 10 Sparrows and mice, and 190 ounces of beef. The first indications of the effect of the new diet were noticeable in a few weeks and in a curious manner. Gradually two dull sooty areas began to appear upon the breast and belly, these becoming confluent and diffusing over the entire under parts — more intense upon the breast. A feather from the breast while in this condition showed dull dusky bands radiating from an indistinct median stripe and upon a ground color of dirty white. A faint trace of rufous was present at the anterior end. This phase soon lightened until by the time of moult (Sept. 13, 1898) the bird was back in the light gray state as when captured. The melanistic condition might have been due to the mixing of the color producing substances of the reddish and gray conditions, forming an intermediate or transitional stage. However, the microscope could determine this. Up to this time (Sept. 13) my bird had eaten about 98 ounces of beef in a space of 109 days.

The moult lasted until November, when the gray stage was

still present, as before the increased feather loss. This condition prevailed until the effects of the liver diet begun on Dec. 25, 1898, began to be felt. For 154 days, or until May 28, 1899, this food was kept up. Then through necessity I was obliged to discontinue it as the bird, tired of its one-sided fare, fasted for three and four days together repeatedly and often only tore the food up into small pieces without eating it. By the above date, however, about 12 lbs. of liver were eaten. Feb. 22, 1899, the bird was very noticeably rufous colored from a distance, and this intensified with time, although the color never became profuse enough to cause a general resemblance to the color of the extreme typically red phase as found commonly in the wild state. Especially prominent were the rich borders of the two black spots of the upper breast, and as in the first red state — the colors of the ear tufts were markedly changed. During the latter few weeks, the change was very slow and it was very difficult to get the bird to eat. By May 28, however, he was much more strongly colored with rufous than before.

The beef was again put on and rapidly the bird assumed the dusky state and was immerging from this when, as has been before explained, I was obliged (July 22, 1899) to let it go. The bird flew off swiftly and in its wake the majority of House Sparrows of the vicinity. In this case, 55 days had elapsed since the change of diet, and 45 ounces of beef had been eaten.

In the back feathers the contrasting colors of the two diets were very plainly in evidence, the dull brownish areas of the feathers of the beef diet, being strongly shot with reddish in the feathers under the influence of liver.

Once, for a week, I tried the effects of bread soaked in blood but this food was emphatically rejected. It would have been interesting to have noted the effects caused by a fish diet, or a mixed one, and it is to be hoped that these will be carefully tried at some future time. The forced and one-sided diet appears to be the only marked departure from the ordinary mode of living which would be powerful enough to influence my Owl in such a marked degree, and I confidently believe it to be, at least, the principal cause. While these results do not for a moment attempt an explanation of the occurrence of the two phases in nature they

may supply a hint or two, but these will not be dwelt upon just here.

To conclude, we may affirm, that beyond doubt there was a marked change of color in the feathers of my Owl from gray to a reddish cast; that this was not concurrent with any pronounced feather loss (ptosochromatism); that it was undoubtedly, as seen at the present, influenced partly, if not in whole, by an unnatural diet (liver and kidney); and that in consequence it is an example of abnormal aptosochromatism.

It appeared from the macroscopic nature of the change that repigmentation was forcibly present but to my misfortune, being unable to further investigate this, I will leave it open to the judgment of my readers.

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## THE COLOR OF CERTAIN BIRDS, IN RELATION TO INHERITANCE.

BY I. BICKERTON WILLIAMS, F. Z. S.

THERE are two powerful tendencies whose working has, apparently, determined, to a large extent, the differences and the resemblances in the color of birds, as well as many others of their characters.

These are 'Variation,' on the one hand, tending to produce desirable and necessary changes through the action of natural selection; and 'Inheritance,' on the other, tending to preserve and hand down those forms and qualities that were useful and beneficial to former generations, and which, even now, are not injurious.

In the determination of color, sometimes one of these tendencies seems to have got the upper hand, and sometimes the other. There are certain bird groups that display so many different styles and colors, that, like modern fashions, one might imagine they had been adopted merely for the sake of variety; while, in other groups, some ancient style of plumage and color appears to have

been handed down, almost unchanged, from primitive times; like the Highland costume, which, among ourselves, still survives as a memorial of the past.

The Pigeons are a very homogeneous order of about four hundred and fifty species, and it is not difficult to believe that they all sprung from some primeval pigeon-like bird.

They are divided by Count Salvadori[1] into three principal families — the Tree Pigeons (Treronidæ), Typical Pigeons (Columbidæ), and Ground Pigeons (Peristeridæ). There are, also, two small and peculiar families: the Crowned Pigeons (Gouridæ) with six species, inhabiting New Guinea and some neighboring islands; and the Tooth-billed Pigeon (*Didunculus*), which forms a family by itself. These last two families represent an older type than the others, and are more nearly allied to the extinct Dodo, which used to inhabit Mauritius.

The legs of the Crowned Pigeons are covered all over with small hexagonal scales. Birds with this kind of leg covering are, usually, of ancient type, for it is a more reptilian style than the broad scutellæ which most of them possess.

Gray is the general color of the Crowned Pigeons, with some chestnut markings on the wing-coverts, and a band of chestnut across the back, or the breast.

The Tooth-billed Pigeon has chestnut on the back and wings, though the gray has nearly disappeared, and only a slight tinge of it remains round the sides of the lower neck and on the mantle.

The Dodo, and its near ally, the Solitaire, were both gray birds; the one is described as having been "an ash-color," and the other "a brown gray."

Now, in almost every Pigeon, we find some trace of these primitive colors: some gray, usually on the head or neck; some chestnut, or other reddish shade, on the bend of the wing, or across the back or breast.

In the richly colored group of Tree Pigeons, variation has apparently got the upper hand, but even in a species like Swainson's Fruit Pigeon (*Ptilopus swainsoni*) a little gray still remains on the head, and the beautiful green feathers of the breast are

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[1] Brit. Mus. Cat. of Birds, Vol. XXI.

tipped with it. The underside of the tail feathers is also gray; while a streak of lilac across the breast is the only trace left of the chestnut band.

The Passenger Pigeon is a fine example of the typical family, where gray usually predominates. The head and rump are a specially bright shade of gray; the breast is suffused with the reddish tint, and on the tail some almost concealed patches of chestnut still exist.

In the Blue-headed Quail Dove (*Starnœnas cyanocephala*), from Cuba, which represents the Ground Pigeons, the chestnut shade has spread nearly all over the body, but the olive brown of the back indicates the presence of a certain amount of the gray shade, and the rest of the gray, by being concentrated on the head, has become a deeper tint than usual. The legs of this bird, like those of the Crowned Pigeons, are covered with hexagonal scales; and the survival of this ancient type of scale, in such distant islands as Cuba and New Guinea, is as interesting and peculiar a fact as the two remaining examples of the tapir family being found, respectively, in the Malay Region and Brazil.

There is, also, a group of the Duck family, consisting of some sixteen or seventeen species, which form the subfamily Plectropterinæ of Count Salvadori's classification;[1] and all of them display a certain similarity in coloring that has, apparently, been handed down from a primeval type.

The Horned Screamer (*Palamedea cornuta*) represents a very old form of bird allied to the Ducks. It has spurs on the wings, hexagonal scales on its legs, and a curious horn-like projection on the head. Its main colors are glossy black above and white below.

The Pied Goose of Australia (*Anseranas melanoleucus*) is a more duck-like bird, with partially webbed feet; its general color is black above and white below, and it occupies an intermediate place between the Horned Screamer and the Plectropterinæ, of which the Spur-winged Geese of Africa are typical members; they, also, are glossy black above and white below, and have a knob, instead of a horn-like growth, on the top of the head.

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[1] Brit. Mus. Cat. of Birds. Vol. XXVII.

The Black-backed Goose of India and Africa (*Sarcidiornis melanonota*) also shows a similar black and white plumage, and a fleshy knob on the beak, but 'variation' is driving the black from the head and neck, which presents, in consequence, a most curiously speckled appearance.

In the Wood Duck (*Aix sponsa*) which also belongs to this group, variation has certainly got the upper hand: the fleshy knob has been succeeded by a crest of beautiful feathers; and, altogether, the bird has become one of the handsomest of its tribe; though it still retains the dark glossy back and wings, and the long rounded tail feathers, which are distinguishing marks of nearly all the subfamily.

The Pigeons and Ducks afford an illustration of the inheritance of general colors; but, in some groups, patches and spots of special color seem to be inherited, and become recognition marks of several allied families.

The strong tendency of the Woodpeckers to display a patch of red, or sometimes yellow, on the head of the male bird is well known; but the three other, most nearly allied, families of the zygodactyle Picariæ, viz., the Barbets, Toucans, and Honey-guides, have a similar tendency to show a red or yellow patch on the head or the rump, sometimes on both.

More than ninety of the hundred and twelve known species of Barbet display patches of one or other of these colors, and the few that are without them are generally dull colored birds.

In the Toucans the crimson or scarlet patch on the rump or crissum is a marked feature of the family. In a few species the patch is chestnut; but there are only four or five of the fifty-nine recognized species that are altogether without it.

Nine out of the twelve Honey-guides have some shade of yellow on the lower back or rump, and two, out of the three exceptions, have a white patch.

Like the Woodpeckers, these three families all nest in hollow trees, and lay white eggs.

Their national colors are, evidently, red and yellow.

The Kingfishers are as remarkable for their attachment to blue, or sometimes green, as the Woodpeckers to red. Many species are almost entirely blue on the upper surface, in others

the blue is confined to patches on the lower back, and on the wings. In the Belted Kingfisher it is diffused, as bluish gray over the whole upper surface.

Even a species like the Ruddy Kingfisher (*Halcyon coromandus*), whose plumage is almost entirely chestnut, has, still, a distinctly blue reflection on the white rump, and a purple gloss lingers over the upper surface of the back and wings. The Laughing Kingfisher (*Dacelo gigas*) has, also, notwithstanding its sombre tints, some bluish spots on the wings and rump.

Blue, or green, is a predominant color in the Rollers, Bee-eaters and Motmots, — the three anisodactyle families that are most nearly allied to the Kingfishers. The Rollers have generally rich shades of blue on the wings and tail, as well as on other parts; and the other two families have, as a rule, some bright patch of it on the head or rump.

Like the other group, they all lay white eggs, which are concealed, either in tunnels excavated in the banks of streams or in hollow trees.

Why should the zygodactyle group have a red tendency, and the anisodactyle a blue tendency? It has nothing to do, apparently, either with food or climate.

Is it not, probably, an inheritance from the primeval type of each group, which has become so strongly fixed in the constitution that it is almost impossible to get rid of it?

We may conclude, I think, that color, evanescent and transitory as it sometimes seems, is, under certain aspects, almost as good a guide in classification of birds as the shape of the bill, or the arrangement of the toes.

The groups here noticed were specially suggested by the birds that happened to be in the Natural History Society's Museum at Montreal; but the same persistence of primitive colors could, probably, be traced in other orders, where some early type of the group is still represented by a living form.

# OVER-LOOKED DESCRIPTIONS OF FIVE HUMMINGBIRDS.

BY CHARLES W. RICHMOND.

A RECENT examination of a rare literary and scientific journal, the 'Registro Trimestre,'[1] has brought to light descriptions of five species of Hummingbirds which have, apparently, not been quoted in ornithological literature since Dr. Coues referred to them in his 'Ornithological Bibliography'[2] some years ago. The 'Registro Trimestre' is known to ornithologists chiefly as the journal in which Dr. Pablo de la Llave described the Resplendent Trogon (*Pharomachrus mocinno*), although descriptions of three species of *Tetrao* by the same author also appeared here. These descriptions (in vol. I, nos. 1 and 2, Jan. and Apr., 1832), were, on account of the scarcity of the original journal, reprinted in the Revue et Mag. de Zool., 1861, 23–33; 425–429; the last mentioned also in La Naturaleza, VII, app., 1884, 63–65. It is not generally known, however, that a second volume of the 'Registro' was commenced, and it is in this extra number (no. 5, for Jan., 1833[3]) that the forgotten descriptions of Hummingbirds, also by De la Llave, occur. Fortunately, only one name in current use appears to be affected by De la Llave's paper, although all of the species mentioned in it are credited to our fauna. As, however, the shifting of names and unexpected complications of nomenclature constantly taking place may at any moment necessitate the use of one or more of these terms, it is very desirable that the descriptions be reprinted and made generally accessible.

The descriptions follow (*verb. lit. et punct.*):

T. [rochilus] COHUATL. = Rostro curvo, nigro, plusquam pollicari. = Corpus de rostri basi ad uropigium, duobus pollicibus minus, totum supra splendore aureo tinctum. = Remiges nigrescentes; cauda brevis furcata,

[1] Mexico, 8vo, vol. I, 1832, nos. 1–4; vol. II, 1833, no. 5.

[2] Bull. Geol. and Geogr. Surv. Terr., V, no. 4, 1880, p. 665.

[3] Not published before March, as the last article is dated Feb. 28.

rectricibus acutis, apice nigrescentibus, margine nonnil albis. Subtus, cinereus, gula et suprema pectoris parte, pennis amethystinis multo majoribus ac quodammodo laxis vestitus. = Pars amethystina, quae primo aspectu superimposita sesè offert, notabilis est, pennarum magnitudine et modo. Rutila haec avis a T. *amethystino.* Linnei distinguitur, rostro curvo, et quia in ejus descriptione nulla mentio fit magnitudinis pennarum pectoralium, quae si in amethystino adesset talis nota a celeberrimo Linn. omissa non fuisset. [p. 47.]

This is *Calothorax lucifer* (Swains.), 1827.

T. [rochilus] XICOTENCAL. = Rostrum rectum, pollicare, ad medietatem usque albidum, apice nigrescens. = Corpore exili, Cohuatl aequans magnitudine. Supra oculum, macula albido-rufescens animadvertitur, in lineolam albam desinens. = Caput zaphirinum est, remiges nigrescentes, totumque supra cauda inclusa, quae corpus magnitudinem aequat, aureo nitore lucet. = Subtus, collum zaphirinum est, pectusque smaragdo splendet, abdomine cinereo, una alterave lineola deaurata. Differt a *Zaphirino* Linn. qui cauda et gula rufis sesè ostendit, nec pectore smaragdino indutus apparet. [p. 48.]

*Basilinna leucotis* (Vieill.), 1818.

T. [rochilus] *Tzacatl.* = Rostrum pollicare, mandibula superiori nigra, inferiori albida, apice nigrescenti. = Corpus 2½ pollices aequat. = Collum supra, alarum tectrices, majorque dorsi pars, aureo splendore vividissimo illuminatur. = Remiges aeneo lucent, caudaque cinnamomea purpurino violaceoque nitet. = Caput, collum subtus, pectusque, et abdomen, luce smaragdina splendent, sed inferior abdominis pars cinerea est, lineolis paucis deauratis. = Cauda, avis magnitudinem aequat, rotundataque sesè exhibit. Quatuor species Trochilorum Linneus enumerat, quorum mandibula superior nigra est, et inferior alba, scilicet, *Fimbriatus*, *Leucogaster*, *Tobaci*, *Ruber*, sed horum nullus cum nostro convenit, ut videre potes, descriptiones conferendo. [p. 48.]

This is *Amazilia fuscicaudata* (Fraser), 1840, which will thus become *Amazilia* or *Amizilis tzacatl* (De la Llave). Ornithologists from all quarters will now be able to agree upon one name for this species, which is dedicated to Tzacatl, a Mexican General or Commander.

T. [rochilus] PAPANTZIN. = Rostrum nigrum, rectum, pollicem et alterius dimidium aequans. = Corpus, tripollicare, pone occulum macula alba, capite Zaphirino, de coetero aureum totum supra, remigibus exeptis

nigrescentibus. = Collum subtus, pectusque superiori parte, smaradigno splendent, in viridem cerulescentem varianti. = De pectore ad abdominis medietatem, nigro velutinus est, in aureo-olivaceum transiens, crisso fusco-aureo, caudaque aliquantulum furcata, tripollicari, rectricibus aureis apice rotundatis. [p. 48.]

Obviously, this is *Eugenes fulgens* (Swains.), 1827.

T. [rochilus] TOPILTZIN. = Rostrum rectum, nigrumque est, pollice paullo majus. = Corpus subtripollicare, lincola alba ad latus occuli. = Caput zaphirimi splendoris aliquamtullum reflectit, corpore supra deaurato, remigibus fuscis, rectricibus nigrescentibus, apice amplis et albis, caudam componentibus, tripollicarem et rotundatam. [p. 49.]

This is evidently *Cœligena clemenciæ* (Less.), 1829, but the colors of the throat and crown are transposed.

## ON THE DATE OF LACÉPÈDE'S 'TABLEAUX.'

BY CHARLES W. RICHMOND.

IN 'Natural Science' for Dec., 1897, 432, Mr. C. Davies Sherborn has brought forward a very interesting subject — that of the first published appearance of Lacépède's 'Tableaux,' usually credited to the Mémoires de l'Institut, 1801, but as this writer has noted, sometimes cited vaguely "1799." During his efforts to solve the question of date, Mr. Sherborn discovered these 'Tableaux' in the "Didot" edition of Buffon, at the end of Vol. XIV of the Quadrupèdes, which, it appears, bears the date 1799 upon its title page. The "Didot" edition, in 18mo, is said to consist of 76 volumes, dating from 1799 to 1806; the genera, Mr. Sherborn states, are to be credited to Lacépède, and the species to Daudin. The latter doubtless here described various birds intended to appear in his 'Traité,'[1] and an account of them, by

[1] To have been completed in 6 volumes, according to the prospectus in the Journ. Typographique. Vol. I was published Jan., 1800; vol. II, publ. May, 1800, and the third volume was in the press and would not be long in appearing (Journ. Typ.). It was, however, never published.

any one who has access to the work, will be very acceptable to ornithologists.

Not long since, having occasion to examine the 'Journal Typographique,'[1] I unexpectedly found the "Didot" edition announced in course of publication by Plassan, in monthly livraisons of two volumes each. Further inquiry brought to light the fact that only a small portion of the work (9 livraisons) was issued in 1799, and vol. XIV of the Quadrupèdes (in livr. 35), was not published until Oct., 1802![2] Again, it appears that the Didot's had no connection with the work before 1803, as the following "avis" (Journ. Typ., Aug. 25, 1803, 358) will show:

"MM. *Pierre Didot* l'aîné, et *Firmin Didot*, viennent d' acquérir, et de réunir à leur *Collection stéréotype*, l' édition, de format *in*-18, de l'*Histoire naturelle de Buffon*, revue par son continuateur, *M.* Lacépède, membre de l'Institut national des sciences et des arts; ils stéréotypent en ce moment-ci, et mettront très-incessamment en ventre les 4 vol. qui terminent l'*Histoire naturelle des poissons*, par M. Lacépède, et complettent en même tems cette édition, dont les trente-cinq premières livraisons ont été imprimées par M. *Plassan*. Nous imprimerons dans notre prochain No., leur nouveau *Prospectus*, qui se distribue chez eux, avec leur notice stéréotype."[3]

Thus it would appear that the first 70 volumes constituted Plassan's edition, and the last 6 Didot's. If Didot's imprint occurs in the early volumes of the set quoted by Mr. Sherborn it would indicate a reprint of Plassan's edition. Why the later volumes should be dated 1799 I cannot surmise, unless it be that the set of 70 volumes was intended for publication in that year, and the plan to issue in monthly livraisons, an afterthought. Antedated

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[1] A weekly journal, published in Paris from 1797 to 1810, devoted exclusively to the announcement of new works, music, etc.; succeeded, in 1811, by the 'Journal Genéral de l'Imprimerie et de la Librarie.'

[2] Engelmann's reference (Bibl. Hist. Nat., 1846, 322) to a tract containing these tableaux "in-18. Paris, 1802. Plassan," is additional evidence. Engelmann gives the whole work as dating from 1799 to 1802.

[3] In the forty or more notices of this work in the 'Journal Typographique,' between 1799 and 1802, there is no reference to the Didots.

works[1] are not uncommon, especially in the case of French works issued in livraisons.

The "Didot" or Plassan edition disposed of, it becomes necessary to determine the original place of publication of the tableaux. Mr. Sherborn quotes from Engelmann (Bibl. Hist. Nat., 1846, 376) a tract "in–4. *Paris. an* VII. (1799). Plassan. (38 pag.)," supposed to contain these papers,[2] but waiving this as inaccessible and doubtful, the earliest published reference, in the case of the bird portion, appears to be Daudin's 'Traité,' Vol. I,[3] Jan. 1800 (422–438). Here the principal bird classifications from Johnston, 1657, to Lacépède, 1799, are shown, with more or less detail, giving in each instance the name of the author and work from which it was extracted. Lacépède's tableau (in full, but differing in some details from that of 1801), however, is cited simply as "Méthode de Lacépède, 1799," indicating apparently that it was previously unpublished. Having been read before the Institute June 9, 1799, it was undoubtedly accessible to Daudin. The specimens in the Paris Museum were at that time arranged, and no doubt labelled according to the tableau. (*Cf.* Daudin, Traité, I, 35.)

The various genera in our Check-list credited to Lacépède, 1801, and others to Cuvier, Leçons d'Anat. Comp. I,[4] should properly be quoted "Lacépède, in Daudin, Traité," etc.

In order to render the dates of publication of the Plassan

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[1] Byron's Narrative of the voyage of the 'Blonde,' dated 1826, was publ. Feb. 20, 1827; the Appendix to Parry's 2nd voyage, dated 1825, was publ. in Feb., 1827; Swains. & Rich. Fauna Boreali-Americana, II, dated 1831, was publ. in Feb., 1832.

With French works it was often the practice to issue the title page, table of contents, etc. in the first livraison; among antedated works may be noticed Vieillot's Ois. Am. Sept., dated 1807, but published in 22 livraisons, of which the first was issued Dec. 1, 1807! — The Zoölogy of the voyage of the 'Uranie' & 'Physicienne,' dated 1824, was published in 16 livraisons, the last in June, 1826, etc.

[2] There is no mention of such a tract in the Journ. Typ. for the year 1799.

[3] Announced in the Journ. Typ., Jan. 19, 1800. Giebel (Orn. Thesaurus, I, 1872, 3), for some reason, gives it as "1799."

[4] Published in April, 1800 (Journ. Typ. Apr. 19, 1800).

edition of Buffon available, a list of the livraisons, with contents and dates is appended.

"Histoire Naturelle par Buffon, mise dans un nouvel ordre, par le cit. Lacépède, membre de l'Institut national de France.

"Cette édition de format *in*-18, paroîtra par livraison de deux volumes chaque mois, sans interruption, à compter du 1 er floréal an 7." [= Apr. 20, 1799.]

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| Livr. 1. | Tome I. Théorie de la terre.<br>Tome I. Quadrupèdes. | Journ. Typographique.<br>Apr. 19, 1799,[1] 209. |
| Livr. 2. | Tome II. Théorie de la terre.<br>Tome I. Oiseaux. | Journ. Typographique.<br>May 19, 1799, 243. |
| Livr. 3. | Tome III. Théorie de la terre.<br>Tome II. Quadrupèdes. | Journ Typographique.<br>June 18, 1799, 275. |
| Livr. 4. | Tome IV. Matières Générales.<br>Tome II. Oiseaux. | Journ. Typographique.<br>July 18, 1799, 306.[2] |
| Livr. 5. | Tome V. Matières Générales.<br>Tome III. Quadrupèdes. | Journ. Typographique.<br>Aug. 17, 1799, 346. |
| Livr. 6. | Tome VI. Matières Générales.<br>Tome III. Oiseaux. | Journ. Typographique.<br>Sept. 16, 1799, 379. |
| Livr. 7. | Tome VII. Matières Générales.<br>Tome IV. Quadrupèdes. | Journ. Typographique.<br>Oct. 21, 1799, 26.[3] |
| Livr. 8. | Tome VIII. Matières Générales.<br>Tome IV. Oiseaux. | Journ. Typographique.<br>Nov. 20, 1799, 57. |
| Livr. 9. | Tome IX. Matières Générales.<br>Tome V. Quadrupèdes. | Journ. Typographique.<br>Dec. 20, 1799, 82. |
| Livr. 10. | Tome X. Matières Générales.<br>Tome V. Oiseaux. | Journ. Typographique.<br>Jan. 29, 1800, 122. |
| Livr. 11. | Tomes XI, XII. Matières Générales. | Journ. Typographique.<br>Feb. 28, 1800, 155. |
| Livr. 12. | Tome XIII. Matières Générales.<br>Tome VI. Quadrupèdes. | Journ. Typographique.<br>Apr. 4, 1800, 202. |
| Livr. 13. | Tome XIV. Matières Générales.<br>Tome VI. Oiseaux. | Journ. Typographique.<br>Apr. 24, 1800, 227. |
| Livr. 14. | Tome XV. Matières Générales.<br>Tome VII. Quadrupèdes. | Journ. Typographique.<br>May 19, 1800, 250. |
| Livr. 15. | Tome XVI. Matières Générales.<br>Tome VII. Oiseaux. | Journ. Typographique.<br>June 18, 1800, 290. |
| Livr. 16. | Tome XVII. Matières Générales.<br>Tome VIII. Quadrupèdes. | Journ. Typographique.<br>July 23, 1800, 331. |

[1] I have converted the dates from the Republican calendar into that now in use.

[2] On p. 318 (Aug. 22) a notice by the editor of the Hist. Nat. states, among other things, that the tableaux méthodiques will be placed at the end of the "histoire des oiseaux."

[3] "Cette édition *in*-18 se continue avec le plus grand succès, et mérite à tous égards aux éditeurs les plus grands éloges."

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| Livr. 17. | Tome XVIII. Matières Générales.<br>Tome VIII. Oiseaux. | Journ. Typographique.<br>Aug. 22, 1800, 365. |
| Livr. 18. | Tome XIX. Matières Générales.<br>Tome IX. Quadrupèdes. | Journ. Typographique.<br>Sept. 22, 1800, 3. |
| Livr. 19. | Tome XX. Matières Générales.<br>Tome IX. Oiseaux. | Journ. Typographique.<br>Oct. 26, 1800, 34. |
| Livr. 20. | Tome XXI. Matières Générales.<br>Tome X. Quadrupèdes. | Journ. Typographique.<br>Nov. 30, 1800, 66. |
| Livr. 21. | Tome XXII. Matières Générales.<br>Tome X. Oiseaux. | Journ. Typographique.<br>Jan. 4, 1801, 107. |
| Livr. 22. | Tome XXIII. Matières Générales.<br>Tome XI. Quadrupèdes. | Journ Typographique.<br>Jan. 24, 1801, 132. |
| Livr. 23. | Tome XXIV. Matières Générales.<br>Tome I. Quadrupèdes Ovipares. | Journ. Typographique.<br>Mch. 5, 1801, 170. |
| Livr. 24. | Tome XI. Oiseaux.<br>Tome I. Poissons. | Journ. Typographique.<br>Apr. 4, 1801, 203. |
| Livr. 25. | Tome XII. Oiseaux.<br>Tome II. Ovipares. | Journ. Typographique.<br>May 9, 1801, 243. |
| Livr. 26. | Tome XIII. Oiseaux.<br>Tome II. Poissons. | Journ. Typographique.<br>June 3, 1801, 267. |
| Livr. 27. | Tome XIV. Oiseaux.<br>Tome III. Ovipares. | Journ. Typographique.<br>July 3, 1801, 299. |
| Livr. 28. | Tome XV. Oiseaux.<br>Tome III. Poissons. | Journ. Typographique.<br>Aug. 27, 1801, 355.[1] |
| Livr. 29. | Tome XVI. Oiseaux.<br>Tome IV. Ovipares. | Journ. Typographique.<br>Oct. 11, 1801, 19. |
| Livr. 30. | Tome XVII. Oiseaux.<br>Tome IV. Poissons. | Journ. Typographique.<br>Nov. 15, 1801, 50. |
| Livr. 31. | Tome XVIII. Oiseaux.<br>Tome V. Poissons. | Journ. Typographique.<br>Jan. 29, 1802, 131. |
| Livr. 32. | Tome XII. Quadrupèdes.<br>Tome VI. Poissons. | Journ. Typographique.<br>Apr. 19, 1802, 225.[2] |
| Livr. 33. | Tome XIII. Quadrupèdes.<br>Tome VII. Poissons. | Journ. Typographique.<br>July 18, 1802, 339. |
| Livr. 34. | Tomes VIII, IX.<br>Poissons. | Journ. Typographique.<br>Sept. 16, 1802, 411. |
| Livr. 35. | Tome XIV. Quadrupèdes.<br>Tome X. Poissons. | Journ. Typographique.<br>Oct. 21, 1802, 30, 31.[3] |

[It will be noticed that no reference is made to any place of publication other than the Mémoires de l'Institut.]

[1] "Il ne reste plus, pour la terminer, que sept livraisons, que nous publierons régulièrement."

[2] "C'est le nombre considérable de planches de cette livraison, qui en a retardé la publication. Les éditeurs assurent les souscripteurs," etc., etc.

[3] "On trouve à la fin du tome XIV des Quadrupèdes, une table dans laquelle tous les quadrupèdes et les oiseaux dont Buffon a traité, sont inscrits dans l'ordre et dans le genre auxquels ils appartiennent, d'après la méthode du cit. Lacépède, publiée dans les *Mémoires de l'Institut national*, et que l'on a suivie pour l'arrangement des collections du Muséum d'histoire naturelle," etc., etc.

# A SYNOPSIS OF THE GENUS CONTOPUS AND ITS ALLIES.

BY HARRY C. OBERHOLSER.

A CRITICAL examination of the various species of the genera *Contopus*, *Blacicus* and *Myiochanes* reveals the fact that the limits of these groups are badly in need of readjustment. In the first place, *Nuttallornis* Ridgway, proposed in subgeneric sense for *Contopus borealis*,[1] is, by reason of very pronounced characters, without doubt of generic rank. *Blacicus*, which at the present time is commonly held to be an Antillean type, must either be extended to include several South and Central American forms of *Contopus*, or be extinguished entirely. With such changes, however, the group admits of intelligible diagnosis, though *Blacicus barbirostris* Swainson must be removed to *Myiarchus*, where it certainly belongs. The two species currently considered to constitute the genus *Myiochanes* cannot structurally be distinguished from *Blacicus*, and consequently should be included in the latter.

The name *Contopus* Cabanis[2] is antedated by *Contipus* de Marseul,[3] proposed for a genus of Coleoptera. The derivation of these two words is identical, and they differ simply in the connecting vowel; so that according to our usage, as, for instance the rejection of *Campylorhynchus* on account of a prior *Campylirhynchus*, the term *Contopus* must be displaced. *Syrichta* Bonaparte[4] applies to the same group of birds, but is in turn preoccupied, in Lepidoptera, by *Syrichtus* Boisduval.[5] As there appear to be no other synonyms, a new name is necessary for

[1] Man. N. Amer. Birds, 1887, 337.

[2] Journ. f. Orn., 1855, 479.

[3] Ann. Soc. Ent. de France, 1853, 543.

[4] Ann. Sci. Nat. sér. 4, Zool. I, 1854, 133.

[5] Icones, 1832–33, 230.

the group to which, in a restricted sense, *Contopus* is now applicable.

### Nuttallornis *Ridgway.*

*Nuttallornis* RIDGWAY, Man. N. Amer. Birds, 1887, 337.

Type, *Tyrannus borealis* Swainson.

CHARS. GEN. — Resembling *Horizopus*, but tarsi shorter than middle toe with claw; wing exceeding tail by about one-half the length of latter; rictal bristles less developed (actually as well as comparatively shorter than in *Horizopus virens*); first primary longer than the fourth.

*Geographic Distribution.* — North America; south in winter through Central America and northwestern South America as far as Peru.

### Nuttallornis borealis (*Swainson*).

*Tyrannus borealis* SWAINSON, Fauna Bor.-Am. II, 1831, 141, pl. 35.
*Muscicapa inornata* NUTTALL, Man. N. Am. Birds, I, 1832, 282.
*Muscicapa cooperi* NUTTALL, Man. N. Am. Birds, I, 1832, 282.
*Contopus mesoleucus* SCLATER, Proc. Zool. Soc. 1859, 43.
*Geog. Dist.* — The same as that of the genus.

### Horizopus,[1] nom. nov.

*Syrichta* BONAPARTE, Ann. Sci. Nat. sér. 4, Zool. I, 1854, 133 (nec *Syrichtus* Boisduval).

*Contopus* CABANIS, Journ. f. Orn. 1855, 479 (nec *Contipus* de Marseul).

Type, *Muscicapa virens* Linnæus.

CHARS. GEN. — Similar to *Empidonax*, but tarsi much shorter, wings longer and much more pointed.

*Geographic Distribution.* — North America, except the most northerly portions; Mexico; Central America; northern and western South America as far south as the Province of Tucuman, Argentine Republic.

### Horizopus pertinax (*Cabanis*).

*Contopus pertinax* CABANIS, Mus. Hein. II, 1859, 72.
*Geog. Dist.* — Guatemala and southern Mexico.

### Horizopus pertinax pallidiventris (*Chapman*).

*Contopus pertinax pallidiventris* CHAPMAN, Auk, XIV, 1897, 311.
*Geog. Dist.* — Mountainous areas of northern Mexico, central and southern Arizona.

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[1] ὁρίζω, limito; πούς, pes.

Readily distinguishable from true *H. pertinax* by its paler coloration.

**Horizopus ochraceus** (*Sclater & Salvin*).

*Contopus ochraceus* SCLATER & SALVIN, Proc. Zool. Soc. 1869, 419.
*Geog. Dist.* — Costa Rica.

**Horizopus lugubris** (*Lawrence*).

*Contopus lugubris* LAWRENCE, Ann. Lyc. N. Y. VIII, 1865, 134.
*Geog. Dist.* — Veragua and Costa Rica.

Apparently a distinct species, though near *H. pertinax*. It has the wings relatively rather shorter than its congeners, barring one exception; but in other respects is quite typical.

**Horizopus brachyrhynchus** (*Cabanis*).

*Contopus brachyrhynchus* CABANIS, Journ. f. Orn. 1883, 214.
*Geog. Dist.* — Province of Tucuman, northwestern Argentina.

The most southern member of the genus.

**Horizopus ardosiacus** (*Lafresnaye*).

*Tyrannula ardosiaca* LAFRESNAYE, Rev. Zool. 1844, 80.
*Contopus ardesiacus* CABANIS, Journ. f. Orn. 1855, 479.
*Geog. Dist.* — Bolivia, Peru, Ecuador, Colombia, Venezuela, and Guiana.

Agrees with *lugubris*, in having the wings relatively shorter than in the other species.[1]

**Horizopus virens** (*Linnæus*).

*Muscicapa virens* LINNÆUS, Syst. Nat. ed. 12, I, 1766, 327.
*Muscicapa querula* VIEILLOT, Ois. Am. Sept., I, 1807, 68, pl. 39 (nec Wilson).
*Muscicapa rapax* WILSON, Am. Orn. II, 1810, 81, pl. xiii, fig. 5.
*Contopus albicollis* LAWRENCE, Ann. N. Y. Acad. Sci. III, 1885, 156.
*Geog. Dist.* — Eastern North America, north to southern Canada and Newfoundland, west to the Plains; south in winter through eastern Mexico, Central America and Colombia to Ecuador.

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[1] *Contopus plebeius* Cabanis, Mus. Hein. II, 1859, 71, possibly belongs in this vicinity, but it has not been possible satisfactorily to indentify the species.

The type of *Contopus albicollis* Lawrence, which has been examined in the present connection, although paler than normal *virens*, particularly about the head and throat, still presents in neither size, color nor proportions any characters which can not be quite closely matched in specimens of this species.

**Horizopus vicinus** (*Ridgway*).

*Contopus vicinus* RIDGWAY, Proc. U. S. Nat. Mus. X, 1887, 576.
*Geog. Dist.* — Swan Island, Caribbean Sea.

In color closely resembling *Horizopus virens*, but without much doubt a good species. The shape of its bill inclines toward that of *Blacicus caribæus*; but in other characters it is a typical *Horizopus*.

**Horizopus richardsonii** (*Swainson*).

*Tyrannula richardsonii* SWAINSON, Fauna Bor.-Amer. II, 1831, 146, pl. 46, lower fig.
*Tyrannula phœbe* BONAPARTE, Comp. List, 1838, 24 (nec *Muscicapa phœbe* LATH.).
*Tyrannula bogotensis* BONAPARTE, Consp. Av. I, 1850, 190.
*Contopus sordidulus* SCLATER, Proc. Zool. Soc. 1859, 43.
*Contopus veliei* COUES, Proc. Acad. Nat. Sci. Phila. 1866, 61 (in text).
*Geog. Dist.* — Western North America, east to the Plains, north to British Columbia and the interior of British America, south through Mexico, Central America and Colombia to Ecuador.

Material at hand seems to indicate that *Contopus sordidulus* Sclater is not entitled to even subspecific recognition, the original description having been probably based on exceptionally small, possibly immature, specimens of true *richardsonii*.

**Horizopus richardsonii peninsulæ** (*Brewster*).

*Contopus richardsonii peninsulæ* BREWSTER, Auk VIII, 1891, 144.
*Geog. Dist.* — Southern Lower California.

The large bill seems to be the principal character of this race, but not an entirely constant one. The shape of the bill in some specimens resembles that of *H. vicinus*.

**Blacicus** *Cabanis.*

*Blacicus* CABANIS, Journ. f. Orn. 1855, 480.
*Myiochanes* CABANIS, Mus. Hein. II, 1859, 71.
Type, *Muscipeta caribæa* d'Orbigny.
CHARS. GEN. — Similar to *Horizopus*, but wing much shorter; bill usually broader and its outline less acute; rictal bristles longer and more numerous.
*Geographic Distribution.* — Southern Mexico; Central America, and South America down to Peru and southern Brazil.

**Blacicus latirostris** (*Verreaux*).

*Myiobius latirostris* VERREAUX, N. Arch. d. Mus. II, Bull. 1866, p. 22, t. 3, fig. 2.
*Blacicus latirostris* SCLATER, Cat. Birds Brit. Mus. XIV, 1888, 244.
*Geog. Dist.* — St. Lucia, West Indies.

This species differs from most of the other West Indian forms of the genus in the shorter, broader bill, as well as longer rictal bristles, these reaching very nearly, if not quite to the end of the beak.

**Blacicus brunneicapillus** *Lawrence.*

*Blacicus brunneicapillus* LAWRENCE, Ann. N. Y. Acad. Sci. I, 1879, 161.
*Geog. Dist.* — Dominica and Guadeloupe, West Indies.

Similiar to *latirostris* in shape of bill and development of rictal bristles.

**Blacicus martinicensis** *Cory.*

*Blacicus martinicensis* CORY, Auk, IV, 1887, 96.
*Geog. Dist.* — Martinique, West Indies.

Not examined; but stated by Mr. Cory to be allied to *B. brunneicapillus*, differing from that species in its darker pileum, darker cervix, and paler under surface.

**Blacicus caribæus** (*d'Orbigny*).

*Muscipeta caribæa* D'ORBIGNY, in La Sagra's Cuba, Aves, 1839, 92.
*Blacicus caribæus* CABANIS, Journ. f. Orn. 1855, 480.
*Geog. Dist.* — Cuba.

**Blacicus hispaniolensis** (*Bryant*).

*Tyrannula carribœa* var. *hispaniolensis* BRYANT, Proc. Bost. Soc. Nat. Hist. XI, 1866, 91.
*Contopus frazari* CORY, Bull. Nutt. Orn. Club, VIII, 1883, 94.
*Sayornis dominicensis* CORY, Bull. Nutt. Orn. Club, VIII, 1883, 95.
*Blacicus hispaniolensis* SCLATER, Cat. Birds Brit. Mus. XIV, 1888, 242.
*Geog. Dist.* — St. Domingo, West Indies.

**Blacicus pallidus** (*Gosse*).

*Myiobius pallidus* GOSSE, Birds Jamaica, 1847, 166.
*Rhyncocyclus cerviniventris* SALVADORI, Atti. Soc. Ital. VII, 1864, 153.
*Blacicus pallidus* SCLATER, Proc. Zool. Soc. 1861, 77.
*Geog. Dist.* — Jamaica.

**Blacicus blancoi** *Cabanis.*

*Blacicus blancoi* CABANIS, Journ. f. Orn. 1875, 224.
*Geog. Dist.* — Puerto Rico.

This species is usually credited to Gundlach, Journ. f. Orn. 1794, p. 311, but here no description is given, so the authority for the name is apparently Cabanis, as above quoted.

**Blacicus bahamensis** (*Bryant*).

*Empidonax bahamensis* BRYANT, Proc. Bost. Soc. Nat. Hist. VII, 1859, 109.
*Blacicus bahamensis* SCLATER, Cat. Birds Brit. Mus. XIV, 1888, 242.
*Geog. Dist.* — Bahama Islands.

Somewhat aberrant generically in possessing a relatively shorter wing than *B. caribæus.*

**Blacicus flaviventris** *Lawrence.*

*Blacicus flaviventris* LAWRENCE, Proc. U. S. Nat. Mus. IX, 1886, 617.
*Geog. Dist.* — Grenada, West Indies.

The type of this species, taken by Mr. Wells, appears to be the only specimen known. It seems to be distinct, differing from *brunneicepillus* in its yellow abdomen and entirely yellow mandible.

**Blacicus punensis** (*Lawrence*).

*Contopus punensis* LAWRENCE, Ann. Lyc. N. Y. IX, 1869, 237.
*Geog. Dist.* — Puna Island, Ecuador.

Undoubtedly a good species, though sometimes synonymized with *brachytarsus*.

**Blacicus brachytarsus** (*Sclater*).

*Empidonax brachytarsus* SCLATER, Ibis, 1859, 441.
*Contopus schottii* LAWRENCE, Ann. Lyc. N. Y. IX, 1869, 202.
*Geog. Dist.* — Southeastern Mexico, from central Vera Cruz to Yucatan and Cozumel Island.

At least three species have, by some authors, been united under *B. brachytarsus*, one of which (*B. punensis*) has already been considered. Birds from the type locality of *brachytarsus* seem to be identical with those from Yucatan and Cozumel Island, as already shown by Mr. Ridgway,[1] so that *Contopus schottii* of Lawrence becomes a synonym.

**Blacicus andinus** (*Taczanowski*).

*Empidonax andinus* TACZANOWSKI, Proc. Zool. Soc. 1874, 539.
*Contopus depressirostris* RIDGWAY, Proc. U. S. Nat. Mus. VI, 1883, 403.
*Geog. Dist.* — Southern Mexico (Pacific side), Central America, and South America east to Trinidad, south to Peru.

This bird seems to be undoubtedly distinct from true *brachytarsus*, with which it has usually been confounded. It is in color much less dingy throughout, particularly below, where also it is frequently less deeply yellowish; and has, moreover, a shorter tail. Specimens from northern South America appear to have longer rictal bristles, and, in some details of coloration, to differ somewhat from Central American birds; but as the material at hand is not sufficient definitely to prove them separable, no distinction is here made. The name *andinus*, based on specimens from Peru, thus becomes the proper one for the species. Should it ever be

[1] Man. N. Am. Birds, 1887, 339.

desirable to distinguish by name the Central American form it should be called either *Blacicus depressirostris* or *Blacicus andinus depressirostris*.

Like *B. brachytarsus* the present species is hardly a typical *Blacicus*, having less conspicuous rictal bristles and rather longer wings than *B. caribaeus*; but although both have heretofore been placed in *Contopus* they undoubtedly belong in *Blacicus*.

**Blacicus pileatus** (*Ridgway*).

*Contopus pileatus* RIDGWAY, Proc. U. S. Nat. Mus. VIII, 1885, 21.
*Geog. Dist.* — Unknown.

The type, in the collection of the American Museum of Natural History, still remains the sole representative of this very interesting species. It seems to be quite distinct.

**Blacicus cinereus** (*Spix*).

*Platyrhynchus cinereus* SPIX, Av. Bras. II, 1825, 11, pl. 13, fig. 2.
*Tyrannula curtipes* SWAINSON, Orn. Draw. 1834–41, pl. 54.
*Geog. Dist.* — Southeastern Brazil.

**Blacicus nigrescens** (*Sclater & Salvin*).

*Myiochanes nigrescens* SCLATER & SALVIN, Proc. Zool. Soc. 1880, 157.
*Geog. Dist.* — Ecuador.

To the authorities of the American Museum of Natural History and of the National Museum the writer wishes to express his indebtedness for the use of the material employed in the preparation of this paper. He is further under great obligations to Mr. Ridgway for many valuable suggestions.

# REPUBLICATION OF DESCRIPTIONS OF NEW SPECIES AND SUBSPECIES OF NORTH AMERICAN BIRDS.

BY J. A. ALLEN.

REQUESTS have been received from various members of the A. O. U., who have not full access to the current literature of ornithology, for the republication in 'The Auk' of the descriptions of all new species and subspecies of North American birds described in other publications than this journal. In response to such requests the Council of the A. O. U. has authorized such republication, of which the first instalment here follows, beginning with those included in the 'Ninth Supplement' to the Check-List (see Auk, XVI, Jan., 1899, pp. 97–133), and including those since published to date.

In this republication the original diagnoses or descriptions are given in full, and such additional remarks as are essential to a proper presentation of the case, in the exact words of the author, unless otherwise indicated by the omission of marks of quotation. Later instalments of similar scope and character will be given at the close of each year.

### Phaëton americanus *Grant.*

YELLOW-BILLED TROPIC BIRD.

*Phaëton americanus* GRANT, Bull. Brit. Orn. Club, No. XLIX, Dec., 1897, p. xxiv; Ibis, April, 1898, 288.

"*Adult male and female.* — Similar to *P. flavirostris* Brandt, but differing constantly in the following points: — the black on the outer web of the first primary extending to within half an inch of the extremity, on the second and fourth quills reaching almost to the tip, while the third had the outer web entirely black. Bill entirely yellow, except above the nasal opening.

"*Range.* — East and southeast coasts of North America, from Bermuda to the West Indies."

### Rallus crepitans waynei BREWSTER.

WAYNE'S CLAPPER RAIL.

*Rallus crepitans waynei* BREWSTER, N. Engl. Zoöl. Club, I, 50, June 9, 1899.

"*Subspecific characters.*—Similar to *R. crepitans*, but the general coloring much darker, the under parts with more ashy, the under tail coverts with fewer markings.

"Type, ♂ adult, no. 4220, collection of W. Brewster, St. Mary's, Camden County, Georgia, March 18, 1878, W. Brewster.

"Crown, nape, wings and tail, plain and rather pale seal brown; wing coverts, tertials, scapulars, upper tail coverts and feathers of the back and rump, rich seal brown, narrowly bordered with ashy; throat, abdomen and a short stripe running from the base of the upper mandible to above the eye, brownish white, the middle of the throat almost clear white; under tail coverts white with traces of dusky bars on a few of the feathers; flanks and crissum ashy brown with transverse bars of white. Remainder of under parts, with sides of head and neck, ashy, tinged with pale cinnamon on the breast. Axillars brown with narrow transverse bars of white.

"Wing, 5.40; tarsus, 2.15; arc of culmen from feathers, 2.48 [in.].

"From *Rallus crepitans*, the form just described may be most readily distinguished by the sharper contrast between the light and dark colors of the back, the centers of the dorsal feathers being rich seal brown and their edges bright ashy, whereas in *crepitans* the brown is pale and somewhat olivaceous, and the ashy comparatively dull. Most of my specimens also have much more ashy beneath than is found in any of the examples of *crepitans* which I have seen, but this difference is not constant. In the tendency to an excess of ashy on the under parts, and to a scarcity or almost total absence of dark markings on the under tail coverts, *waynei* agrees closely with *scottii*. It is so evidently a connecting link between the latter and *crepitans* that it may well be doubted whether *scottii* should continue to stand as a full species."

*Type locality*, St. Mary's, Camden County, Georgia.

*Range*, South Atlantic coast, from Virginia southward.

### Rallus levipes *Bangs*.

*Rallus levipes* BANGS, Proc. N. Eng. Zoöl. Club, I, 45, June 5, 1899.

"*Characters.*—Much smaller than either *R. obsoletus* or *R. beldingi*; bill much more slender; tarsus and foot smaller than in either. In color it differs from *R. obsoletus* in being much darker above—more olive and less grayish, brown; in having breast and sides of neck deep cinnamon-rufous instead of grayish cinnamon, this color extending

well up on sides of neck and meeting the color of upper parts sharply; ground color of flanks, etc., darker — less grayish; a gray patch behind eye; superciliary streak *white* instead of *rusty*. From *R. beldingi* it differs, in color, in having the back feathers much less decidedly streaked; breast, etc., less pinkish or salmon-colored; flanks, etc., browner — without dusky bars bordering the white ones, the white bars wider; superciliary *white* instead of *rusty*.

"*Color.* — Above, olive brown, broadly striped with blackish brown; breast, etc., deep cinnamon-rufous, extending over sides of neck and meeting color of upper parts sharply; flanks, etc., olive, broadly banded with white; centre of belly and throat whitish; superciliary streak white; a gray patch on side of head behind eye.

"*Measurements.* — Type, ♀ adult: wing, 152; tail, 58.2; tarsus, 49; culmen, 58 mm. Topotype, ♀ ad., No. 47,847, Coll. of Wm. Brewster: wing, 141; tail, 56.6; tarsus, 45; culmen, 54.2 mm."

Type locality, Newport Landing, Los Angeles Co., California.

### Canachites canadensis labradorius *Bangs.*

LABRADOR SPRUCE GROUSE.

*Canachites canadensis labradorius* BANGS, Proc. N. Engl. Zoöl. Club, I, 1899, 47, June 5, 1899.

"*Subspecific characters.* — Size of true *C. canadensis* or a little larger; adult male, summer plumage, similar to true *C. canadensis*, except that the white markings on under parts and on border of throat are rather heavier, and gray markings of back and rump more pronounced and purer gray — less reddish olive gray; adult female, summer plumage, quite different in color from true *C. canadensis*, upper parts much more purely black and gray, with much less buffy or ochraceous; under parts much whiter, with less buffy or ochraceous."

Type locality, Rigoulette, Hamilton Inlet, Labrador.

### Haliæetus leucocephalus alascanus *C. H. Townsend.*

NORTHERN BALD EAGLE.

*Haliætus leucocephalus alascanus* C. H. TOWNSEND, Proc. Biol. Soc. Washington, XI, 145, June 9, 1897.

"*Subspecific characters.* — Differing from *H. leucocephalus* in size, being considerably larger.

"*Habitat.* — Alaska.

"*Type.* — ♂ (U. S. Nat. Mus. No. 151567). Unalaska, Aleutian Islands.

"*Dimensions of Type.* — Wing, 23.75; tail, 11.50; tarsus, 4; culmen, 2.60; depth of bill, 1.50; hind claw, 1.50 [inches].

"In forty specimens examined from localities between Florida and Alaska there is a regular increase in size northward. Eagles from northern States are larger than those from Florida and Louisiana. In addition to the other differences in size, the bill of the Alaskan bird is wider, while the edging to the feathers, especially on the wing coverts, is both lighter and broader. The egg of the northern bird is distinctly larger, the average of sixteen specimens being 73.5 × 57.5 mm., while that of forty-five Florida specimens is 69 × 53.5 mm."

On the ranges of the northern and southern forms of the Bald Eagle see Auk, XVI, p. 109, and on the inadmissibility of *H. leucocephalus washingtoni*, see *ibid.*, p. 131.

### Bubo virginianus pallescens *Stone.*

WESTERN HORNED OWL.

*Bubo virginianus pallescens* STONE, Am. Nat. XXXI, March, 1897, 237.

". . . . I would propose for the Horned Owl of the interior United States (the *subarcticus* of authors, *nec* Hoy) the name *pallescens*, designating as the type No. 152219, Coll. U. S. Nat. Mus., ♂, Watson Ranch, 18 mi. S. W. of San Antonio, Texas.

"*Bubo virginianus pallescens* is smaller and paler than true *virginianus* (the wing measuring 13.75 in.) with much less rufous admixture. The barring on the belly is much finer and the feet almost pure white.

"While not differing so much in size from *B. v. pacificus* as indicated in my former paper (Auk, 1896, p. 156), its coloration is quite distinct. The latter race is darker than *pallescens* with more black admixture above, heavier bars on the belly and with the feet more mottled with rufous and brown."

### Syrnium nebulosum helveolum *Bangs.*

TEXAS BARRED OWL.

*Syrnium nebulosum helveolum* BANGS, Proc. N. Engl. Zoöl. Club, I, 31, March 31, 1899.

"*Subspecific characters.* — Size of true *S. nebulosum;* toes naked as in *S. n. alleni;* colors very pallid throughout; ground color of back, wings and tail, pale yellowish brown or cinnamon, lightest on wings and tail and shading on head toward sepia; all the light bars and spots on primaries, tertials and scapulars, large and conspicuous and white; the light bars on tail wider and paler than in true *S. nebulosum;* colors below all paler; dark striping and barring more cinnamomeous, less dusky, and ground color paler, more whitish; feathers of tibia and tarsus, buff to whitish, showing very little, or none whatever, of the dusky markings present in both *S. nebulosum* and *S. n. alleni.*

"Size.—Type, ♀ adult: wing, 331; tail, 211 mm. Topotype, ♂ adult: wing, 347; tail, 214 mm."

Type locality, Corpus Christi, Texas.

### Sturnella magna hoopesi *Stone.*

RIO GRANDE MEADOWLARK.

*Sturnella magna hoopesi* STONE, Proc. Acad. Nat. Sci. Phila. 1897, 149.

"A careful comparison of a large series of specimens shows that the Meadowlark of the Rio Grande Valley is as light or lighter than the lightest *neglecta*, averaging very similar to this form in the coloration of the upper surface but agreeing with *magna* in the distribution of the yellow below. The birds from Mexico on the other hand represent the darkest coloration exhibited by [the genus] *Sturnella*. To unite these two extremes and also the isolated Florida bird under one name seems to me eminently misleading and quite at variance with our treatment of geographical races in other species.

"I therefore propose to separate as a distinct subspecies the Rio Grande Meadow Lark and to place the Florida bird for the present at least along with true *magna*, for reasons that will be stated below. The Rio Grande Meadowlark may be separated as follows:

"*Sturnella magna hoopesi* subsp. nov.

"Type No. 786, Coll. Josiah Hoopes, Brownsville, Texas, ♂, March 13, 1892, F. B. Armstrong.

"Color below as in *magna*, but rather lighter and less buff on the sides and under tail coverts; upper surface much grayer and generally lighter. The brown tints of *magna* are very largely replaced by gray, especially on the wings. Sides of the face whiter than in *magna;* tail bars almost always distinct, *i. e.*, not confluent along the shaft of the feather.

"This bird is the lightest of all the Meadowlarks, averaging a little lighter than *neglecta*, the tail bars are also more distinct than in any of the other races."

"While this race approaches *neglecta* in its general light color, the absence of yellow from the malar region will at once distinguish it. From *mexicana* it differs more widely than from any of the other races, as we have in these two the extremes of dark and light coloration."

### Melospiza fasciata ingersolli *McGregor.*

TEHAMA SONG SPARROW.

*Melospiza fasciata ingersolli* MCGREGOR, Bull. Cooper Orn. Club, I, No. 2, March–April, 1899, 35.

"*Subsp. char.* — Most closely related to *guttata* but darker and without rusty wash; spotting of lower parts tending more to streaks than to spots as in *guttata*; wing slightly longer. Entire upper parts, sides of head and flanks are darker and less grayish than in *heermanni*.

"*Type*, No. 2222, ♂ adult, Coll. R. C. McG., Battle Creek, California, Oct. 19, 1898. Wing, 2.82; tail, 2.74; tarsus, .88; exposed culmen, .44 [in.].

"*Geog. Dist.* — Northern Sacramento Valley, south in winter to San Francisco Bay."

This form is intermediate between *Melospiza fasciata guttata* and *M. f. heermanni*.

### Pipilo fuscus carolæ *McGregor*.

NORTHERN BROWN TOWHEE.

*Pipilo fuscus carolæ* McGREGOR, Bull. Cooper Orn. Club, I, No. 1, Jan.–Feb. 1899, 11.

"Closely related to *P. f. crissalis* but distinguished by grayer and more uniform color of upper parts, much paler throat patch and slightly longer tail.

"*Type*, ad. male (No. 2200, Coll. R. C. McG.; Battle Creek, California, Nov. 7, 1898). Wing, 4.01; tail, 4.49; tarsus, 1.08; exposed culmen, .62 [in.]."

"Battle Creek the type locality, forms the boundary line between Tehama and Shasta Counties."

### Dendroica coronata hooveri *McGregor*.

HOOVER'S WARBLER.

*Dendroica coronata hooveri* McGREGOR, Bull. Cooper Orn. Club, I, No. 2, March–April, 1899, 32.

"*Subsp. char.* — In colors and markings like *Dendroica coronata*, but with wing and tail much longer.

"*Type*, No. 1988, ♂ adult, Coll. T. J. Hoover, Palo Alto, California, April 16, 1898. In summer plumage. Above bluish slate, streaked with black; top of head more finely streaked; crown, rump and sides with patches of lemon yellow; superciliary stripe, eyelids, throat, belly, spots behind nostrils, two bars on wings and spot on inner web of three outer tail feathers, white; cheeks and lores, black; feathers of breast black-centered. Wing, 3.00; tail, 2.31; exposed culmen, .38 [in.].

"*Geog. Dist.* — Western United States, breeding probably in British Columbia and Alaska."

Average of 7 males of *D. c. hooveri*: wing, 3.02; tail, 2.30; exposed culmen, .36 in.

Average of 8 males of *D. coronata*: wing, 2.87; tail, 2.16; exposed culmen, .35 in.

Average of 10 females of *D. c. hooveri*: wing, 2.87; tail, 2.22; exposed culmen, .36 in.

Average of 10 females of *D. coronata*: wing, 2.70; tail, 2.10; exposed culmen, .35 in.

### Thryomanes bewickii cryptus *Oberholser*.[1]

"*Thryothorus bewickii leucogaster* BAIRD, Rev. Amer. Birds, 1864, I, p. 127 (nec *Troglodytes leucogastra* Gould, quae *Hemiura leucogastra*). *Thryothorus bewickii bairdi* A. O. U. Check-List, 1886, p. 328 (in part).

"*Chars. subsp.* — Thryomanes T. b. bewickii similis, sed major, notaeo dilutiore et canescentiore.

"*Measurements* (*18 specimens*). — Wing, 53 to 61 (average 56.8) mm.; tail, 52 to 61 (average, 56.3) mm.; exposed culmen, 13.5 to 15.5 (average, 14.1) mm.; bill from nostril, 10 to 11 (average, 10.4) mm.; tarsus, 17.5 to 19.5 (average, 18.3) mm.; middle toe with claw, 15 to 17 (average, 16.2) mm.

"*Type locality.* — San Antonio, Texas.

"*Geographic distribution.* — Texas, except the extreme western corner, States of Nuevo Leon and Tamaulipas, in Mexico, with probably Kansas, Indian Territory, and Oklahoma. Migratory north of Texas.

"*Type.* — Male, adult; No. 112838, U. S. N. M.; San Antonio, Texas, January 5, 1887; C. W. Beckham.

"*Description.* — Upper surface rich, warm broccoli brown, darker and more rufous on rump, the feathers of which have more or less concealed white spots; superior tail-coverts hair brown, obscurely barred with blackish. Wings fuscous; innermost secondaries and outer webs of the others marked transversely with the color of the back; primaries margined basally on external webs with buffy; wing-coverts like the back, the greater series with obsolete fuscous bars. Middle tail-feathers, and at least basal portion of exterior webs of all but outer pair, hair brown, barred regularly, though not sharply, with blackish; remainder of tail black, with very faintly indicated paler bars, continuous with those on outer webs; two external pairs of feathers broadly tipped with grayish white, the outermost deeply indented with white on outer webs; remainder of rectrices tipped with hair brown. Superciliary white; lores and cheeks grayish white, mingled with brownish; postocular streak like the crown; sides of the neck brownish gray; lower surface grayish white, scarcely tinged with brownish on flanks; crissum slightly washed with ochraceous, and barred with black; axillars and under-coverts wing grayish white."

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[1] Proc. U. S. Nat. Mus., XXI, No. 1153, Nov. 19, 1898, 425.

"This form of Bewick's Wren is the one to which Baird's name *leucogaster* is applicable, as the range, 'southern borders of United States into Mexico,' given by him, taken in connection with the specimens he enumerates, clearly indicates. But it now seems quite certain that by perhaps an interchange at labels Baird was in error when he identified the Texas *Thryomanes* with Gould's *Troglodytes leucogastra*.[1] There seems to be no reasonable doubt of the authenticity of the specimen which Dr. Sharpe catalogues as the type of *Troglodytes leucogastra*, Gould,[2] for it came from the collection of the Zoological Society, where Gould's type was supposed to have been; it was collected in Tamaulipas, Mexico, the type locality of *Troglodytes* (=*Hemiura*) *leucogastra*, whence, until recently, no other specimen (of *Hemiura*) has been recorded; and, finally, it is undoubtedly a *Hemiura*, thus agreeing perfectly with Gould's original description of *Troglodytes leucogastra*, while in that description the expression "*crissoque pallidi-brunneis*" could not possibly apply to any form of Bewick's Wren. Baird's term *leucogaster*, as used for the *Thryomanes*, thus having been based upon a misidentification, can not, according to the usual precedure in such cases, be considered entitled to recognition; for in reality he proposed no new name, but merely referred his specimens to a species already described.

"The Texan form of *Thryomanes* may be readily distinguished from *bewickii* by much paler, grayer coloration above, as well as by longer tail, wing, culmen and middle toe. In fact, the lack of intermediate specimens strongly suggests the possibility of specific distinctness; but the material at hand is not sufficient satisfactorily to determine this point."

### Thryomanes bewickii eremophilus *Oberholser*.[3]

"*Thryothorus bewickii bairdi* A. O. U. Check-List, 1886, p. 328 (in part).

"*Chars. subsp.* — Thryomanes T. b. crypto affinis; sed partibus superioribus magis griseis distinguendus.

"*Measurements* (*18 specimens*). — Wing, 51 to 60 (average, 56.1) mm.; tail, 50.5 to 63.5 (average, 56.8) mm.; exposed culmen, 13 to 15 (average, 13.8) mm.; bill from nostril, 9 to 11 (average, 10) mm.; tarsus, 15 to 18.5 (average, 18) mm.; middle toe with claw, 13.5 to 17 (average, 15.5) mm.

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"[1] Sclater and Salvin, Nomenclator Avium Neotrop., 1873, p. 155; Salvin and Godman, Biol. Centr.-Amer., Aves, 1880, I, p. 95; Faxon, Auk, 1898, XV, p. 60."

"[2] Cat. Birds Brit. Mus., 1881, VI, p. 285."

[3] Proc. U. S. Nat. Mus., XXI, No. 1153, Nov. 19, 1898, 427.

"*Type locality.*—Big Hatchet Mountains, Grant County, New Mexico.

"*Geographic distribution.*—Extreme western Texas (in winter to central part), Arizona, New Mexico, and southeastern California, south over the table-lands of western Mexico to central Zacatecas; north to Colorado, southern Utah, southern Nevada, and possibly southeastern Oregon. Resident south of Colorado.

"*Type.*—Male, adult; No. 126774, U. S. N. M.; Big Hatchet Mountains, Grant County, New Mexico, May 19, 1892; Mearns and Holzner.

"*Description.*—Above uniform pale grayish sepia, slightly rufescent on the rump, the feathers of which have more or less concealed white spots; upper tail-coverts hair brown, faintly barred with darker. Wing-quills fuscous, indented externally with the color of the upper surface, wing-coverts like the back. Middle tail-feathers, and basal portion of exterior webs of the rest, with the exception of the outermost pair, hair brown, regularly barred with black; three outer pairs with broad grayish tips, and white indentations on exterior webs, these latter most numerous on the outer pair; other rectrices tipped with hair brown; remainder of tail black. Superciliary stripe white; lores and cheeks grayish white, somewhat mixed with brown; postocular streak like the crown; sides of neck brownish gray; lower surface dull white, nearly clear white on chin and throat, washed with gray on sides and flanks; crissum heavily barred with black; lining of wing grayish white."

"The difference existing between *eremophilus* and *cryptus* consists in the rather paler, much more grayish tint of the upper parts, and no difficulty will be experienced in identifying the great majority of specimens. Some intermediates, however, are to be distinguished only by the slightly paler or more grayish color of the wings. This subspecies is more closely allied to *bairdi* than to any of the other Mexican forms, although the ranges of *bairdi* and *eremophilus* are separated by the interposition of a race larger and darker than either.

"As in *cryptus*, there exists a considerable amount of individual difference, even at the same season, this consisting principally in the darker or more rufescent color of the upper surface. Two breeding specimens from Paisano, Texas, are perfectly typical of the present race, though rather darker than most Arizona examples. Specimens from San Diego, Chihuahua, Mexico, White Mountains, and the region of Death Valley, California, are identical with those from Arizona and New Mexico. A winter bird from the Valparaiso Mountains, Zacatecas, Mexico, differs only in being slightly darker."

### Thryomanes bewickii charienturus *Oberholser.*[1]

"*Thryothorus bewickii spilurus* A. O. U. Check-List, 1886, p. 327 (in part).

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[1]Proc. U. S. Nat. Mus. XXI, No. 1153, Nov. 19, 1898, 435.

"*Chars. subsp.* — Thryomanes T. b. eremophilo similis, a quo differt partibus superioribus et hypochondriis obscurioribus, striga superciliari paululum latiore, alis caudaque multo brevioribus.

"*Measurements* (*23 specimens*). — Wing, 48.5 to 55 (average, 51.7) mm.; tail, 47.5 to 54.5 (average, 51.5) mm.; exposed culmen, 12.5 to 14.5 (average, 13.8) mm.; bill from nostril, 9 to 11.5 (average, 10.2) mm.; tarsus, 18 to 19.5 (average, 18.8) mm.; middle toe with claw, 14 to 16 (average, 15.4) mm.

"*Type locality.* — Nashoguero Valley, Lower California (Mexican and United States boundary line).

"*Geographic distribution.* — Coast region of southern California, north to about Pasadena, south to latitude 28°, Lower California; Santa Catalina Island, California. Resident throughout its range.

"*Type.* — Male, adult; No. 134163, U. S. N. M.; Nashoguero Valley, Lower California, June 5, 1894; Dr. Edgar A. Mearns.

"*Description.* — Upper parts dull grayish sepia, slightly rufescent on rump, the feathers of this part with more or less hidden roundish white markings; superior tail-coverts hair brown, obscurely barred with dusky. Wings fuscous, secondaries alternately barred on external webs with blackish and the color of the back; lesser and median coverts, with margins of greater series, also similar to the upper surface; primaries narrowly edged on basal portion of exterior webs with buffy. Tail black, the central rectrices hair brown, with regular bars of black; exterior feathers with terminal portion dull smoke gray, the outer webs barred with dingy white; remaining feathers barred on external webs and tipped with hair brown. Superciliary stripe white; lores and cheeks grayish white, mixed with brownish; postocular streak like the crown; sides of neck deep brownish gray; chin and throat white (soiled by wear); rest of under surface grayish white (adventitiously washed with brownish); sides and flanks tinged with smoke gray; crissum heavily barred with black; lining of wing grayish white."

"From *eremophilus* this race differs in decidedly darker flanks and upper surface, rather broader superciliary stripe, more regularly and heavily barred crissum, as well as much shorter wing and tail. From *murinus*, which it approximates very closely in color above, it differs in conspicuously shorter wing and tail, shorter culmen, darker flanks, and somewhat less heavily barred lower tail-coverts."

### Thryomanes bewickii drymœcus *Oberholser*.[1]

"*Thryothorus bewickii spilurus* A. O. U. Check-List, 1886, p. 327 (in part).

"*Chars. subsp.* — Thry. b. charienturo affinis, sed supra valde rufescentior et paulo dilutior.

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[1] Proc. U. S. Nat. Mus., XXI, No. 1153, Nov. 19, 1898, 437.

"*Measurements* (*15 specimens*). — Wing, 47 to 54.5 (average, 51.4) mm.; tail, 45 to 53 (average, 49.8) mm.; exposed culmen, 13 to 14.5 (average, 13.7) mm.; bill from nostril, 9 to 10.5 (average, 9.8) mm.; tarsus, 17.5 to 19 (average 18.4) mm.; middle toe with claw, 14.5 to 16.5 (average, 15.5) mm.

"*Type locality.* — Baird, California.

"*Geographic distribution.* — Sacramento and San Joaquin valleys, California, including west slope of Sierra Nevada, west to the coast about San Simeon; casually to Arizona. Resident in suitable localities throughout its breeding range.

"*Type.* — Male, adult; No. 91610, U. S. N. M.; Baird, California, June 6, 1883; C. H. Townsend.

"*Description.* — Above uniform dull rufescent hair brown, the rump with more or less concealed white spots, the tail-coverts slightly grayer than the back, obsoletely barred with darker brown. Wings fuscous; innermost secondaries and outer webs of remainder broadly barred with the color of the upper surface and somewhat with blackish; wing-coverts like the back; primaries edged basally with buffy. Middle rectrices hair brown, barred with black; exterior webs of succeeding pair and basal portion of exterior webs of remainder, excepting outermost pair, like the middle feathers; outer pairs tipped with dull gray, external webs of outermost pair indented terminally on exterior web with white; tips of the other feathers hair brown; rest of tail black. Superciliary stripe white; lores and cheeks white, somewhat mingled with brown; postocular streak like the crown; sides of neck pale brownish gray; lower parts grayish white, adventitiously washed with brownish, lightest on the throat, the flanks and sides tinged with smoke gray; this deepest on the former; under tail-coverts tinged slightly with ochraceous, and barred with black; lining of wing grayish white."

"*Thryomanes b. drymœcus* may be distinguished from *T. b. charienturus* by rather paler, decidedly more rufescent flanks and upper surface, together with somewhat shorter tail. Compared with *eremophilus*, it is darker, more rufescent above, with a somewhat more prominent superciliary stripe, and decidedly shorter wing and tail. The characters which separate *drymœcus* from *cryptus* consist in rather darker flanks and upper surface, rather more conspicuous superciliary stripe, somewhat more heavily and regularly barred crissum, much shorter wing and tail. It differs from *leucophrys* in much more rufescent color above, more heavily barred crissum, and much shorter culmen."

### Thryomanes bewickii calophonus *Oberholser.*[1]

"*Thryothorus bewickii spilurus* A. O. U. Check-List, 1886, p. 327 (in part).

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[1] Proc. U. S. Nat. Mus. XXI, No. 1153, Nov. 19, 1898, 440.

*Chars. subsp.* — Thry. b. spiluro persimilis, sed paulo major; rostro multo longiore; necnon hypochondriis paululum rufescentioribus.

"*Measurements* (*17 specimens*). — Wing, 50.5 to 54.5 (average, 53) mm.; tail, 49.5 to 54.5 (average, 51.4) mm.; exposed culmen, 13.5 to 15 (average, 14.8) mm.; bill from nostril, 10 to 11.5 (average, 10.8) mm.; tarsus, 17.5 to 20 (average, 19.3) mm.; middle toe with claw, 16 to 17.5 (average, 16.9) mm.

"*Type locality.* — South Park, King County, Washington.

"*Geographic distribution.* — Pacific slope, from Oregon north to southern Vancouver Island, the valley of the Fraser River, and slightly farther along the mainland coast. Resident probably throughout its range, at least from Puget Sound southward.

"*Type.* — Male, adult; No. 135210, U. S. N. M.; South Park, King County, Washington, December 19, 1894; L. M. Turner.

"*Description.* — Above rich dark bistre, slightly deeper on head, shading to vandyke brown on rump, the feathers of which have more or less concealed white spots; upper tail coverts sepia, inconspicuously marked transversely with darker brown. Wings fuscous, their coverts and the exterior webs of secondaries mostly like the back, the latter obscurely barred with blackish, basal half of outer primaries margined exteriorly with pale brown. Tail black, middle feathers sepia, with narrow bars of black; all the rest tipped with dull gray and more or less distinctly barred externally with sepia; outer pair with indentations of grayish white on terminal portion of exterior webs. Superciliary stripe white, lores and cheeks grayish white, the two last mentioned mixed with dark brown; postocular streak reddish sepia; sides of neck deep brownish gray; lower parts grayish white, most nearly pure white on chin, strongly tinged with brownish gray on sides, this color becoming more ferruginous and more conspicuous on flanks; lower tail-coverts heavily barred with black; lining of wing grayish white."

"Since the type of *Troglodytes spilurus* Vigors undoubtedly came from California, the present race seems to have received hitherto no distinctive title. It differs from *spilurus*, its nearest ally, in conspicuously larger bill, besides averaging greater in all its other measurements. The upper surface seems to be usually rather deeper and richer brown; the flanks somewhat more rufescent. From *bewickii*, *calophonus* is easily distinguished by deeper, more sooty brown above, much darker sides and flanks, wider superciliary stripe, decidedly longer bill, tarsus and middle toe. It may be readily separated from *drymæcus* by the much darker flanks and upper surface, larger bill and feet. Compared with *nesophilus*, it differs in darker, more reddish brown upper surface, and in larger size, this most apparent in the tail and culmen. From *charienturus* this northwest coast form may be readily discriminated by darker, much more reddish brown flanks and upper surface, longer middle toe and culmen."

**Thryomanes bewickii nesophilus** *Oberholser.*[1]

"*Thryothorus bewickii spilurus* A. O. U. Check-List, 1886, p. 327 (in part).

*Chars. subsp.*—Thryomanes T. b. charienturo affinis, a quo differt notaeo, lateribus hypochondriisque obscurioribus ac rufescentioribus.

"*Measurements* (*6 specimens*).—Wing, 49 to 53 (average, 51.4) mm.; tail, 47 to 51 (average, 48.8) mm.; exposed culmen, 13.5 to 14.5 (average, 14.1) mm.; bill from nostril, 10 to 11 (average 10.2) mm.; tarsus, 18.5 to 19.5 (average, 18.8) mm.; middle toe with claw, 15 to 16 (average, 15.7) mm.

"*Type locality.*—Santa Cruz Island, California.

"*Geographic distribution.*—Santa Rosa and Santa Cruz Islands, California.

"*Type.*—Male, adult; No. 117641, U. S. N. M., Santa Cruz Island, California, February 7, 1889; C. H. Townsend.

"*Description.*—Above grayish bistre, rather darker on head, somewhat more rufous on rump, the feathers there with more or less concealed white spots; upper tail-coverts hair brown, obscurely barred with blackish. Wings fuscous, the secondaries marked on external webs, the innermost ones on both, with alternate bars of brownish olive and blackish; primaries indented basally on outer webs with buffy; lesser and middle coverts like the back; greater series barred on exterior webs and tipped with this same color. Central rectrices and exterior webs of all but outer pair like the back in color, but regularly barred with black; tips of the feathers hair brown, indentations on distal portion of external webs of outer pair dull white; remainder of tail black. Superciliary stripe white; lores and cheeks grayish white mixed with dull brown; postocular streak brownish olive; sides of neck brownish gray, under surface dull brownish white, most nearly pure white on chin and throat; sides washed with brownish gray, flanks strongly tinged with the same; under tail-coverts slightly washed with ochraceous and heavily barred with black; lining of wing grayish white.

"This new subspecies may be distinguished from *charienturus* by the darker, more rufescent coloration of the upper surface, sides and flanks; the tail also averages appreciably shorter. It is noticeably lighter and rather more grayish than *spilurus*, besides having a somewhat longer culmen. From *drymœcus* it is without difficulty separable by the noticeably darker and rather more sooty color of the flanks and upper surface. The tail also averages slightly shorter."

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[1] Proc. U. S. Nat. Mus. XXI, No. 1153, Nov. 19, 1898, 442.

## GENERAL NOTES.

**The Black Tern (*Hydrochelidon nigra surinamensis*) in New York Harbor.** — On August 31, 1899, five Black Terns were shot at Bedloes Island, New York Harbor. The two that I skinned, both males, had been eating small fish. Others of the same species were seen subsequently in the same locality at about same date. — L. S. FOSTER, *New York City.*

**Capture of the Brown Pelican in Wyoming.** — I have to record the capture of *Pelecanus fuscus* upon one of the city reservoirs of Cheyenne, Wyoming, on July 12, one individual, a female, which was alone. The bird was in poor flesh and apparently had about completed moulting. Two or three of her rectrices were less than half grown and each wing showed two or three old brown primaries and two or three old brown secondaries not yet shed. Head and neck uniform slate gray. Measurements as follows: Culmen, 11.12; wing, 20.00; length, 49.00 inches. I do not know of any other captures of this species in Wyoming, or, for that matter, in any intermountain State, in this or contiguous latitudes. I am not familiar with the species, but think the uniform brown head and neck would indicate immaturity, but the few worn and much darker quills of the wings and the partly moulted tail offer conclusive evidence against the suggestion that the bird is of the present year. I have mounted the specimen and placed it in the Cheyenne High School collection. — FRANK BOND, *Cheyenne, Wyo.*

**The Little Blue Heron (*Ardea cærulea*) in Connecticut.** — On July 21, 1899, I saw no less then seven individuals of this species, all young birds, in white plumage. On the 25th I secured one, and a few days later another; there were five shot all together. The remaining two left and were not seen again. The flock spent about two weeks here, feeding on the salt marshes. This is the first and only time that I have met with *Ardea cærulea*, in Connecticut. — ARTHUR WILLIAM BROCKWAY, *Old Lyme, Conn.*

**The Green Heron Breeding in Ontario.** — Very little seems to be known of the breeding habits of the Green Heron (*Ardea virescens*) in Ontario, and its presence is not often noted north of the southern parts of the Province — McIlwraith makes the general statement that it breeds near Dunville, the St. Clair Flats, and at Hamilton. This summer we have located it in a spot fully eighty miles north of these places and there is reason to believe that it breeds at several points in this locality. Early in June the Rev. C. J. Young of Lansdowne, Ont., informed me

that he had located several Green Herons at Charleston Lake in the County of Leeds, and had obtained positive proof that they were breeding there. On June 14, 1899, we visited the lake together and investigated a grove of young trees which was partly submerged as a result of the blocking up of the outlet to the lake. The flooded territory was anything but an inviting field for investigation, even by enthusiastic ornithologists, as it was almost impossible to shove a punt through the tangle; to wade in slime and water three or four feet deep was not an attractive occupation, and the presence of clouds of mosquitoes made a long stay in the vicinity out of the question. We had not penetrated the tangle many yards before a deserted nest was seen; twenty yards or so further on was a second nest, and while we approached it a Green Heron flew to it, but immediately departed on seeing the intruders.

The nest was a platform of sticks, placed nine feet from the water in an ash sapling. After considerable difficulty, the eggs, five in number, were secured and proved to be somewhat advanced in incubation. The millions of mosquitoes and the impenetrable nature of the grove made further investigation impossible, although we saw several Green Herons. The probability is that other nests existed. In another locality we found two nests, one of which had recently contained eggs.

Two Herons were noticed at this place, and it is evident from what we learned that these birds are comparatively common about Charleston Lake. Not wishing to disturb the birds after having satisfactorily established the fact that these Herons breed as far north as the County of Leeds, we declined further contest with the battalions of mosquitoes, whose breeding and other habits are too well known to require further investigation. — C. K. CLARKE, M. D., *Kingston, Ont.*

**White-tailed Hawk in Arizona.** — Two years ago, while crossing the desert between Florence and Red Rock, I found a nest of the White-tailed Hawk (*Buteo albicaudatus sennetti*) upon which the bird was sitting. The nest held a single egg, far advanced in incubation. The parent was not secured. The past spring I shot here at Phoenix a fine male of this species, thus showing beyond any doubt that it occurs in Arizona as an annual breeder and not merely as an accidental straggler. — G. F. BRENINGER, *Phoenix, Arizona.*

**A Phenomenal Flight of Hawks.** — Early on the morning of August 29, 1899, while hunting Bartramian Sandpipers on the hay bottom southwest of Neligh, I was surprised to see the portion of the bottom bordering the Elkhorn River fairly covered with, what I then thought, an exceedingly large flock of Crows. But the few individuals who occasionally arose and lazily flapped their wings for a short distance had the flight of Hawks; and Hawks they proved to be, in extraordinary numbers. The majority were resting upon the ground, but each fence post had its occupant, and some were in the neighboring trees. They appeared to be

quite wearied, as if from a protracted flight, and even the noise of a gun caused but a few of the nearest to fly.

I shot two of the Hawks as they slowly flew over me, both of which belonged to the same species, *Buteo swainsoni*. And, with but one exception (an American Rough-leg), all that I observed were of this species.

I estimated the number of Hawks on this one bottom at between three and four hundred, and was informed by farmers farther up the river that large numbers of the birds were on the bottoms there at the same time. The greater number resumed their journey southward in a loose body an hour or so after sunrise, but a few remained throughout the day. The next morning none were seen.

It would be extremely interesting to know the cause of this unusual flight of Hawks. I have known for some time that *Buteo swainsoni* migrates to the south in the fall, but have never before seen them in flocks, or going southward so early in the season. There had been no cold weather here at the time of the flight; rather the opposite. Possibly in the Dakotas (their breeding grounds) there may have been some atmospheric disturbance which would account for the early exodus. There was also a very large flight of Bartramian Sandpipers on the same morning, but no other birds were present in unusual numbers. — MERRITT CARY, *Neligh, Nebraska*.

**A Musical Woodpecker.** — My attention was first called to this talented bird by the rapid vibrations of one of the four wires running into our office. Looking down the track from where the noise seemed to proceed I spied a Red-headed Woodpecker (*Melanerpes erythrocephalus*) on top of a pole not far away. Leaving the office I went down to the stock pens to watch proceedings. I did not have long to wait, for he began in a short time drumming vigorously against a protruding piece of wire. The piece of wire in question was about ten or twelve inches long with a loop in the center; it stood straight up parallel with the pole and about six inches above it, and protruded from a joint or splice in the wire, left there by some careless lineman.

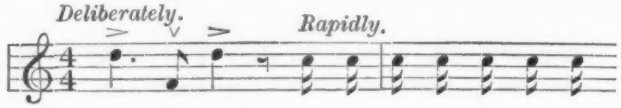
The Woodpecker would drum against it for ten to fifteen seconds at a time, stopping now and then to listen to the humming of the wire, or fly out to catch a passing insect. He would stop and listen in evident enjoyment, then utter a call and proceed. He kept this up for over a month, when he disappeared and I have not seen him since. — OTTO HOLSTEIN, *Muir, Ky.*

**Note on the Name Drymophila.** — Mr. H. C. Oberholser has recently (Proc. Acad. Nat. Sci. Phil., June, 1899, 213) made use of Temminck's name *Drymophila* to replace *Philentoma* Eyton, for a genus of Old World Flycatchers, on the supposition that Swainson's *Drymophila* was preoccupied by Temminck's use of the term. Swainson first published it in Oct., 1824 (Zool. Journ., I, 302), without diagnosis or indication of a

type species, and it was not properly set forth by him until July, 1825 (Zool. Journ., II, 149). Meanwhile, Temminck (Pl. Col., livr. 56, March, 1825, pl. 334) had applied it to a genus of Muscicapidæ, thus blocking its further use as a Swainsonian name. Consequently, Mr. Oberholser adopted *Drymophila* to supersede *Philentoma*, which course would have been perfectly proper, had not Mr. Geo. Such described a *Drymophila variegata* in Jan., 1825 (Zool. Journ., I, 559), which fixed the name, and invalidated its use for Temminck's genus. *Philentoma* will thus remain the proper term for the genus established by Eyton, and *Drymophila* Such (*ex* Swains.) will become valid as the name of the genus now called *Formicivora* (Swains., July, 1825, *nec Formicivorus* Temm., 1807). Prof. Newton has recently noted the untenability of *Formicivora* (Dict. Birds, 1893, 20, footnote), and suggested *Eriodora* Gloger, 1827, as apparently the correct name of the genus. It will be seen from the above, however, that the genus should stand as *Drymophila*, with the following species:

*Drymophila grisea* (Bodd.), *D. intermedia* (Cab.), *D. rufatra* (Lafr. & D'Orb.), *D. strigilata* (Max.), *D. speciosa* (Salv.), *D. ferruginea* (Licht.), *D. striata* (Spix), *D. caudata* (Scl.), *D. genei* (De Fil.), *D. malura* (Temm.), *D. squamata* (Licht.), *D. boucardi* (Scl.), *D. consobrina* (Scl.), *D. virgata* (Lawr.), *D. quixensis* (Corn.), *D. bicolor* (Pelz.). — CHAS. W. RICHMOND, *Washington, D. C.*

**New Song of the Baltimore Oriole.** — I wish to call the attention of the readers of 'The Auk' to a seemingly new song which a number of Baltimore Orioles (*Icterus galbula*) have acquired. The Orioles singing it are abundant in and about Prides Crossing and Beverly Farms, Mass., though similar singers elsewhere have been reported only from South Berwick, Maine.

The new song is as follows:

The three notes, D, A, D, are whistled in a robust, bold, loud quality, noticeably coarser and firmer than the quality of other Oriole songs. The notes are invariable both in tempo, tune and rhythm; except that sometimes a grace note on A precedes the first D, or sometimes the first D is omitted; this apparently when the bird is in a hurry or nervous, or the A may be a trifle sharped. The succeeding sixteenth notes, which constitute the remarkable part of the performance, are indeterminate in pitch, and are spoken to the syllables: *chuck, chuck, chuck, chuck*, etc., perhaps five or seven times iterated.

This chuckling, so far as I can tell, invariably follows this particular tune, but none other. Other Orioles in the same locality sing other tunes with a more mellow and variable quality of whistle; but these latter birds, so far as I can be sure of their individual identity, never chuckle at any time. The chuckling birds seem also to be of a duller orange, almost the tint of a Bluebird's breast, or a 'chestnut' horse, and are possibly last year's young or two-year-olds.

This chuckling song seems well worth mention, because as it is so marked and unusual it can be readily detected. And it would be interesting to inquire how widely spread this song may have become this season, as well as whether it has ever been heard before. If the song is a mimicry or imitation of some other species, I should welcome any suggestion as to the identity of its original model. — REGINALD C. ROBBINS, *Boston, Mass.*

**Song of the White-crowned Sparrow** (*Zonotrichia leucophrys*). — A recent study of captive White-crowned Sparrows tends to show that the female sings a simple copy of the male's usually exquisite strain. Of four females that have come under my notice since the fall of 1897, three have sung in the manner described, while the exceptional one was a bungler that never wholly succeeded in getting the song just right. This bird, captured October 7, 1897, and released July 26, 1898, was in song from October 20 to December 10, 1897, and again during March, April, May and June of the following year.

Early in October, 1898, when White-crowns were perhaps a hundred strong in a nearby weedy potato field, I secured five specimens, two adults and three immatures. One of the adults, recognized as a female, was presently set free; the other, a doubtful subject, on being referred to a tame male of 1897, was immediately identified by him as one of the opposite sex. She was quiet and orderly,— uncommonly so,— hence was reserved for future study.

Of the young trio one turned out to be a female, and although very wild at first, eventually, without coaxing, became tame and confiding. In the fall of 1898 she sang but little and only on occasions when 'fighting mad.' Both females sang intermittently in March and April and daily during May, 1899.

The young males sang diligently from the middle of October to the second week of July, when moulting set in. In March the juvenile style of singing gradually gave way to the adult form. But from the commencement, when angry and defiant, these youngsters always sang in the manner of the adult bird. This strain is not limited to five or six notes, but ranges, according to my observations, from four to fourteen, not including a twittered prelude which ofttimes introduces the song proper.

At first my captives were confined in cages, but latterly have had the freedom of a room where they can fly about and bathe at pleasure. A

soap box partly filled with sweepings from the hayloft affords them plenty of leg exercise, but unfortunately is also the cause of many a selfish quarrel. In order that my birds keep in good health, I have always studied to vary their fare. Besides canary and millet seed, they receive ants' eggs, Mockingbird food, berries, meal worms, etc. If no other live food is offered, they will even accept small earthworms. In winter the little fat grubs and 'worms' found in goldenrod galls are a welcome treat. — E. D. DOWNER, *Utica, N. Y.*

**Ammodramus henslowii. — A Correction.** — In 'The Auk' for April, 1889, p. 194, I reported the occurrence at Fort Adams, Newport, R. I., of *Ammodramus henslowii*. My identification was afterwards found to be incorrect, but through oversight the record has not been changed until now. — WIRT ROBINSON.

**Leconte's Sparrow (*Ammodramus leconteii*) in Kentucky.** — A specimen was killed April 15, 1899, in an old weed grown clover field, about two miles east of Lexington, Ky. It was quite tame, allowing us to approach within five or six feet before attempting to escape. A second specimen was seen July 16, while feeding near the foot of an old 'rock fence' in a dirt lane, the sides of which were overgrown with catnip, wild sage, and various other weeds and young trees.

I believe the species is a rare summer resident and breeder.

This is, as far as I am aware, the first record of its occurrence in Kentucky. — OTTO HOLSTEIN, *Muir, Ky.*

**Nesting of Nelson's Sparrow (*Ammodramus nelsoni*) in North Dakota.** — June 14, 1899, on a broad, alkaline flat, lately a shallow arm of Devils Lake, now nearly dried up, among scant, short grass in a wet, oozy spot, I found the nest of this little known Sparrow, securing the sitting bird and mate with the eggs. An overflow of surface water from a marsh just beyond, during the spring, flows over this flat, at first through a sort of natural ditch, then gradually spreading out till it loses itself in the sticky soil. A bit of ground about three feet square, raised an inch or two from the general level, was sufficient to cause this trifling flow of inch-deep water to divide, forming a tiny island, which was not exactly dry but more nearly so than the immediate surroundings. Here, sunk in the wet earth, and lined sparingly about the sides, but very thickly in the bottom, with fine dried grasses of a wiry nature was the nest, containing five eggs raised by the thick lining well up out of the wet. As the general situation when observed by me was rather dryer than when the nest was first built it must be that the selection of a dismally wet spot was deliberate and, perhaps, indicates the regular custom.

The finding of the nest was purely accidental as, in a more or less vain effort to keep my feet dry, I sprang from point to point, finally alighting with both feet squarely astride the nest, and the sitting bird, as she flut-

tered up and away from between my feet and dropped out of sight in the ragged grass, must have been sorely surprised and startled. The situation was so odd and the eggs so peculiar in appearance that I repaired to my cart, left at some distance, for glass, gun and camera. Returning in fifteen minutes the bird was again flushed; she ran stealthily along where the ground was wet and comparatively bare of vegetation and was presently joined by her mate, twittering weakly from a neighboring weed stalk, who seemed not so averse as the female to searching inspection through the glass. Both were finally shot and carried home with eggs and nest lining.

The eggs are small, about .65 × .50, of grayish-white ground, thickly sprinkled and clouded all over with markings of brown, thickening on the extreme butt into a dark brown zone. The general effect is that of very small eggs of the Savannah Sparrow. One egg, a trifle larger than the rest, shows a bluish-white ground less thickly sprinkled and wholly lacking the clouded appearance of the others, but still exhibiting the well defined zone so symmetrical in all five eggs as to be noticeable. Incubation had progressed about one half, but was not exactly uniform, and one egg was infertile.

Not all the statements of Walter Raine find the widest acceptance, but I am inclined to credit his account of the taking of a nest of this species, as related by him on p. 88, Vol. I, of the 'Nidologist.' At least his description there given corresponds closely with my own observation. I can agree, too, with his statement that the eggs of this species "will never be common in collections." The bird is but a trifle over five inches in length, of sober coloring (except for the bright buff that shows only when in hand), and shy disposition, and if, as seems likely, its nest is habitually located in dreary marshes apart from the haunts of man, its discovery will probably continue rare and the merest accident. I believe the taking of the nest in the United States has not before been recorded.

In photographing this nest and surroundings great pains were taken, but the developed plate shows hopeless overexposure. The eggs are now in the great Norris collection. — EUGENE S. ROLFE, *Minnewaukan, N. Dak.*

**Hirondelles de Guanajuato, Mexico.** — Vers le 15 février de cette année (1898) sont arrivés par un temps chaud les aviones grandes (*Progne subis*). La chaleur a continué avec quelques journées de pluie, et le 7 mars ont apparu les premières golondrinas (*Chelidon erythrogaster*) ainsi que les aviones chicos (*Petrochelidon lunifrons*). Ces oiseaux passent à Guanajuato le printemps et l'été et y font leurs nids: ils s'en vont vers l'automne, et partent par ordre d'arrivée. *Progne subis* est la première à s'en aller; *Petrochelidon lunifrons* émigre vers la fin de septembre, et un peu plus tard *Chelidon erythrogaster*. J'ai vu ce denier arriver à Vera Cruz en 1879 vers le milieu de février; un peu plus tard ils étaient à Orizaba, et quelques jours après à Mexico. J'ignore où *Progne* et *Petro-*

*chelidon* vont passer l'hiver, mais pour *Chelidon erythrogaster* il est certain qu' Azara l'a observé au Paraguay dans les mois de septembre et décembre (Azara, Apunt. para hist. de los pascaros de Paraguay, t. II, p. 507; Madrid, 1805).

*Progne subis* établit son nid dans la ville, ordinairement dans les trous des murs des églises, à les sites presques toujours inaccessibles. Cependent j'en ai trouvé une fois dans le mur d'une maison: c'était un simple fond de marmite en terre que l'oiseau avait utilisé en y jetant pêle-mêle et sans ordre une poignée de fragments de natte de jonc ou de palmier: ce nid doit être souvent très-négligé car on compare ici une maison sans ordre à un nid de avion. Les mâles et les femelles volent ensemble, excepté à l'époque de l'incubation qui a lieu au mois de mai.

*Petrochelidon lunifrons* place son nid sous les poutres des édifices: il a la forme d'une cornue renversée et consiste en de petits tas de boue que l'oiseau prends d'ordinaire dans les grandes galettes de minérai moulu et mêlé d'eau des usines d'argent. Avant l'incubation mâles et femelles

Exacte reproduction d'une hirondelle (*Chelidon erythrogaster*) faisant son nid sur des côtes d'une poutre. Elle apportait de la boue dans la gorge, la déorgeait par petites portions sur le bois, et l'étalait avec son bec comme avec une truelle. Dans un quart d'heure, elle fit trois voyages successifs et son ouvrage avança d'un quart de pouce.

volent ensembles, mais plus tard je n'ai jamais tué un vol que des mâles. Au contraire de *Progne subis*, *P. lunifrons* se pose souvent à terre, surtout pres de l'eau.

*Chelidon erythrogaster* fait son nid dans les mêmes endroits que *P. lunifrons*, avec les mêmes matériaux, mais il lui donne la forme d'un quart de sphère: habituellement c'est de la boue prise à la campagne qui sert pour cet ouvrage. Même à l'époque de l'incubation, on voit souvent les mâles et les femelles chasser ensemble, surtout lorsque les petits sont éclos. Ces derniers partent avec leurs parents, de sorte qu'en hiver on ne voit plus un seul hirundinidé à Guanajuato.

Je ne parle pas de *Tachycineta thalassina* qui est très rare ici, ni de

*Panyptila melanoleuca* que je n'ai pu bien observer: *Panyptila* habite les fentes de quelques rochers sur la montagne.

En 1893 une épidémie de typhus a cruellement sévi à Guanajuato, et les hirondelles ont été fort peu nombreuses; y a-t-il en une simple coincidence ou une relation de cause à effet? Ce qu'il y a de certain c'est qu' aujourdhui ces oiseaux viennent ici beaucoup moins qu'il y a quelques années; la cause est peut-être la suivante. Les éperviers (*Tinnunculus sparverius*) étaient communs par suite de l'abondance des oiseaux insectivorez au gramivores, mais ils ont disparu ensemble depuis que les insectes et les plantes qui les nourrissaient ont diminué en nombre: ce dernier résultat est dû à l'irregularité des pluies causée par le deboisage inconsidéré des montagnes. Les hirondelles disparaitraient aussi certainment si ce n'était le nombre considérable de mouches qui existent en tout temps, mais principalement à l'époque des chaleurs et des pluies (d'avril à octobre), grâce surtout au ruisseau qui traverse la ville, et qui reçoit le tribu des égouts et des lieux d'aisance qui le rend souvent d'une infection insupportable. — O. Dugès, *Guanajuato, Mexico.*

**Very Early Record of the Cliff Swallow.** — This bird was known to the Spaniards long before Say called it *Hirundo lunifrons*, and once occasioned a geographical name. On the 19th of September, 1776, the Spanish priest, Silvestre Velez de Escalante, was in the Wahsatch range of mountains, on their east side, about to pass over them into Utah valley. He went through a cañon, "que mombramos de las Golondrinas, por haber en él muchos nidos de estas aves, formadas contal simetría, que parecen pue-blecillos," in other words, he named it Cañon of the Swallows, because there were in it many nests of these birds, built with such symmetry, that they looked like little towns. This comparison of a cluster of Cliff Swallows' nests to the Indian pueblos of New Mexico is a good one. The passage may be read in the very rare collection of papers entitled: Documentos para la Historia de Mexico, 2d series, vol. I, p. 447. — Elliott Coues, *Washington, D. C.*

**Philadelphia Vireo in West Virginia.** — While hunting for Warblers on May 16, 1899, in the open woods, near Elm Grove, Ohio Co., W. Va., the writer secured a Vireo, which was at first glance supposed to be a specimen of *Vireo gilvus*, but upon subsequent examination the first primary was found wanting and the total number of the same but nine, with other characters in accordance. From this it was very evident that the bird was *Vireo philadelphicus*. Being unable to find any previous record I believe this to be the first specimen which has been taken in the State of West Virginia. — R. B. McLain, *Wheeling, W. Va.*

**A Note on Kirtland's Warbler** (*Dendroica kirtlandi*). — On May 21 of this year, while looking for Warblers in our grove, my attention was

attracted by a loud and entirely unfamiliar song, the cause of which was found to be a rather plain Warbler among the lower branches of a large oak. The actions of the bird were slow, for a Warbler, reminding me more of those of the Red-eyed Vireo. It moved by hops, seldom moving along the branches, but usually sat still and turned its head in all directions in search of insects. At rather short intervals it gave out its loud, passionate song, almost like an Oriole's in the depth of its tone, — a contrast to the high notes of many Warblers. Only once or twice did I see it dart after insects in the air, and it wagged its tail but slightly. Unlike most Warblers it stayed for a long time in one tree and always in the lower half. It did not, however, resort to the bushes or in any way act like a terrestrial species, as Mr. Widmann's specimen did. This particular individual was very tame.

The next morning I heard the song again and went immediately to shoot the bird, lest I might be mistaken as to its identity. This time, however, it was shy and flew at once to another yard. Later it returned to the apple trees in the garden, and, without waiting for any more observations I shot it. This specimen proved to be a male. — ELIOT BLACKWELDER, *Morgan Park, Chicago, Ill.*

**The Hooded Warbler at Montville, Conn.** — On June 18, 1899, I took a Hooded Warbler (*Wilsonia mitrata*) that was singing in some mountain laurel bushes in an oak wood near the town of Montville, Conn., on the southern bank of the Thames River. It was the first time I have ever heard this species sing, and as I could not get within forty yards of it or see it plainly I was obliged to take the bird. I am not aware that the species has been recorded from the region of this river. — REGINALD HEBER HOWE, JR., *Longwood, Mass.*

**Odd Nesting of Maryland Yellow-throat.** — On June 15 of the present year a friend of mine sent for me to come to his house and look at a nest which was built in a shoe, and also to identify the birds. Upon arriving there I was surprised to see *Geothlypis trichas* nesting in a shoe. The locality chosen was near a back entrance to a house situated on the main street of our town. A pair of shoes, which were the property of my friend, were placed outside of the door on the under pinning which projected out from the side of the house about two feet. One day he had occasion to wear them and went out and brought them into the house; as he was about to put them on, he discovered something in one of them, and upon examination found it to be a nest.

The other shoe contained a few dry grasses and other fine material, but for some reason the bird gave up the idea of building in that, and took up housekeeping in shoe No. 2. My friend immediately put the pair of shoes back, thinking that she would return, and upon glancing into the shoe the next day was surprised to see that it contained an egg. She continued laying until she had deposited five. The next day after

the fifth egg was laid a dog came around near the back door and caught sight of the bird in the shoe and made a dash for her, the bird escaping, but breaking three of the eggs.

The shoe, nest, and two eggs are in my collection. The nest was composed of dry grasses and fine moss and lined with horse hair. — ARTHUR WILLIAM BROCKWAY, *Old Lyme, Conn.*

**Puerto Rico Honey Creeper.** — I have been interested in a pair of Honey Creepers, *Cæreba portoricensis* (Bryant), building about my house. They began in a rose bush, but it being too close to the ground they deserted the place and are now busy upon another nest in a small tree. The nest is a little larger than a baseball, perfectly round, with the opening like a well drilled auger hole, just below the middle. Outside are grasses and bits of twine; inside are feathers, and when the birds leave the nest for any time they cover the hole with a couple of feathers. The female does this also when she is within, just peeping out with bill and head, which with the aid of my glass makes a *real picture*. These birds are our 'Jenny Wrens,' and there are a good many of them here all around our houses, especially where roses, coral plants, and other smaller flowers abound. We have become very much attached to them. — GEORGE B. PRATT, *San Juan, Puerto Rico.*

**Notes on Marian's Marsh Wren, *Cistothorus marianæ*, and Worthington's Marsh Wren, *Cistothorus palustris griseus*.** — On April 16, 1897, I shot a very dark colored Marsh Wren near Mount Pleasant, South Carolina, which has the top of head deep black. At Mr. Ridgway's request, I sent the specimen to him and under date of June 10, 1897, he wrote me as follows: "I have just finished examining the Wren, with the aid of Mr. Brewster's series of both *marianæ* and *griseus*. Your dark bird is intermediate, but on the whole may best be considered an exceptionally dark specimen of *griseus*. *Marianæ* is a more rusty brown and usually has the breast speckled with blackish."

I sent the Wren above mentioned to Mr. Brewster and he wrote me under date of Dec. 6, 1897, as follows: "As to the April bird (Wren), I cannot agree with Mr. Ridgway, for it has absolutely none of the true characters of *griseus* and is quite indistinguishable, so far as I can see, from some of my examples of *marianæ* from Tarpon Springs, Florida; although it certainly has more white beneath than is usually the case with that form. In respect to the coloring of the upper parts, and especially of the crown, it is typical *marianæ*, to which I should accordingly refer it despite the locality at which it was taken."

It will be seen from the above that this record extends the range of this bird to the Atlantic coast, and that it is an abundant bird in this State during the migrations the following records will show. On Oct. 1, 1898, I killed four; Oct. 4, five; Oct. 11, one; Oct. 15, one; Oct. 17, three; Oct. 28, two; Oct. 31, two; April 21, 1899, one; May 6, one; May 8, one.

This Wren does not breed anywhere near Mount Pleasant, but is simply a migrant. It will, without doubt, be found breeding on the North Carolina coast.

Worthington's Marsh Wren, *Cistothorus palustris griseus*, which was described by Mr. Brewster (Auk, X, July, 1893, 216), *was* a very common resident breeding bird. In 1893 I took many nests and eggs — all of them being fully identified — but since that date I have taken but *two* birds! They do not breed here now, and the bird is practically extinct. The great cyclone of August 27–28, 1893, must have completely exterminated them, as it occurred at the height of the breeding season. This Wren was a very late breeder, as full complements of their eggs could not be taken until the first week in July, and two, or even three, broods were raised. This Wren is very distinct — being a *gray* bird — with the black of head confined to the extreme sides of head. There is no evidence that it interbreeds with *palustris* or *marianæ* and should be accorded full specific rank.

Since the above was written the July 'Auk' came to hand and I notice an article by Mr. T. G. Pearson mentioning Worthington's Marsh Wren, *Cistothorus palustris griseus*, page 250, as taken at Beaufort, N. C., the identification being made by Mr. Ridgway. I wrote Mr. Pearson to send me these Wrens and they are both typical *marianæ*. The August 2nd specimen is in very worn plumage, but the characters are diagnostic of *marianæ* — the crown being wholly black and the upper tail-coverts showing traces of barring, this being plainly noticeable in spite of the worn plumage. — ARTHUR T. WAYNE, *Mount Pleasant, S. C.*

**Birds Feeding on Hairy Caterpillars.** — In the July Auk, A. W. Perrior, of Syracuse, N. Y., in a note on the 'Food of the Robin,' expresses surprise at seeing the Robin feeding the larvæ of *Clisiocampa americana* to her young, saying that this is the first instance he has known of any bird feeding on them except the Cuckoo. From my own experience I can testify that the Baltimore Oriole eats them also. I have no doubt that a little observation would give us a long list of birds which eat them, judging from the list which has been found to eat *Clisiocampa disstria*, a caterpillar about as hairy as *C. americana*. While in Brandon, Vt., for a short time this spring, I saw the larvæ of the latter eaten by Baltimore Orioles, Red-winged Blackbirds, White-breasted Nuthatches, Chipping Sparrows, Robins and Red Crossbills; and this list is extended to no less than twenty-four species by the observations of Miss Caroline G. Soule, who is working on *C. disstria* at that place. Besides those given above, her list includes Tanagers, Rose-breasted Grosbeaks, Cedarbirds, both Cuckoos, Bluebirds, Flickers, Warbling, Red-eyed, White-eyed and Yellow-throated Vireos, American Goldfinches, Catbirds and Yellow Warblers, as well as Kingbirds, Phœbes, Great-crested Flycatchers and Chebecs. The Flycatchers darted upon the caterpillars as they swung suspended by their webs or fed on pendant leaves. — MARY MANN MILLER, *Brooklyn, N. Y.*

## RECENT LITERATURE.

**Pycraft on the Osteology of the Impennes.**[1] — Mr. Pycraft's second 'Contribution to the Osteology of Birds' treats the Penguins in the same thorough manner that his previous paper dealt with the Steganopodes. We have a detailed account of the skeleton, including that of the young, and this is followed by keys to the genera and species based on characters furnished by various portions of the adult skeleton. It is gratifying to have one more group of birds whose genera are based on osteological characters, also gratifying to see Ratitæ and Carinatæ put in quotation marks.

Like Mr. Grant in the British Museum Catalogue, Mr. Pycraft admits six genera in this compact group of birds and these, as indicated by the diagram, have, with the exception of *Eudyptula*, which has lagged a little, become pretty evenly differentiated from the supposed ancestral form. To use an hibernicism, Mr. Pycraft gives us his conclusions at the beginning, where he states that, while the fore limb represents the high-water mark of skeletal specialization, the skull and other portions of the skeleton being much less specialized, the Penguins do not furnish us with any facts of great importance or carry us beyond the confines of the class. The distinctness of the metatarsals, a feature approached by *Fregata*, is alluded to and it is considered that they represent a halfway stage between the primitive, completely separate metatarsals on the one hand, and the highly-specialized cannon bone on the other, where the three metatarsals are all merged to form a single shaft.

It is pointed out that the Penguins are not plantigrade, but is Mr. Pycraft quite correct in saying that the legs are comparatively little used for the support of the body? — F. A. L.

**Montgomery on the Food of Owls.** — In the 'American Naturalist' for July, 1899,[2] Mr. Montgomery gives the results of his observations on the feeding habits of two species of Owls, — the Short-eared Owl (*Asio accipitrinus*) and the Long-eared Owl (*A. wilsonianus*), the locality being the vicinity of West Chester, Pa. His observations are novel in being based not upon the stomachs of Owls killed, but upon their 'food pellets' collected from the ground beneath their roosting trees. Four Long-

[1] Contributions to the Osteology of Birds. Part II. Impennes. By W. P. Pycraft. Proc. Zool. Soc., London, Dec. 13, 1898.

[2] Observations on Owls, with particular regard to their Feeding Habits. By Thomas H. Montgomery, Jr. Am. Nat., Vol. XXXIII, July, 1899, pp. 563–572.

eared Owls were under observation from Dec. 25, 1898, to Feb. 22, 1899, and one Short-eared Owl from Feb. 26 to March 26, 1899. The pellets were gathered regularly once each week, not only from beneath their roosting trees but from beneath the trees that served as their casual feeding perches, the number of Owls frequenting these roosting and perching trees being also noted daily. The results are given in tabular form, showing the number and species of Owls under observation each day, the number of pellets gathered at each collection, the contents of the pellets, and the daily food average, which, consisting almost wholly of small mammals, varied from 1.57 to 2.16 for each Owl daily. A summary of the contents of the food pellets found under the roosting tree of the Long-eared Owls is thus stated: "2 birds, 1 *Blarina*, 2 *Peromyscus leucopus*, 1 *Mus musculus*, 6 *Microtus pinetorum*, 319 *M. pennsylvanicus*, and 18 undetermined individuals of *Microtus*." The contents of the pellets gathered under the other roosting tree, occupied by the Short-eared Owl, and occasionally by one of the Long-eared Owls, is thus summarized: "1 *Cambarus* [crayfish], 5 birds, 2 *Blarina parva*, 1 *Zapus hudsonius*, and 105 *Microtus pennsylvanicus*." Pellets were gathered from under a number of other trees, all within the radius of an eighth of a mile, which served as feeding perches, which are thought to have been all, or nearly all, produced by these same Owls. "These pellets contained the remains of 5 small birds (including *Regulus, Junco, Certhia*), 3 *Blarina brevicauda*, 3 *B. parva*, 1 *Blarina* undetermined, 2 *Zapus hudsonius*, 3 *Peromyscus leucopus*, 1 *Microtus pinetorum*, 139 *M. pennsylvanicus*, and 4 undetermined individuals of *Microtus*." Thus these five Owls, in the space of about one month, destroyed 12 small birds, 10 shrews, and 600 field mice, of which the greater part were the common meadow vole or 'meadow mouse.' The examination of food pellets gathered at other localities gave similar results, except that the remains of no birds were found.

Mr. Montgomery concludes his very interesting and valuable paper as follows: "In conclusion, it may be noted that these data add further support to the well-proven results of ornithologists, that our local Owls (with the possible exception of the Great Horned Owl) are of the greatest benefit to the agriculturist. Our three commonest local Owls, the Screech, Long-eared, and Short-eared (as well as the rarer Acadian and Barn Owl), are indefatigable destroyers of mice and insects. But since this is the case, and since the group of the Owls is one of great interest to the naturalist, it is to be hoped that future students of their dietary habits will avoid studying their stomachs for this purpose, and in order not to destroy them examine their food pellets instead."—J. A. A.

**Lantz's 'Review of Kansas Ornithology.'**[1]—This very carefully pre-

[1] A Review of Kansas Ornithology. By D. E. Lantz, Manhattan, Kan. Read before the Academy Oct. 28, 1897. Trans. Kansas Academy of Science, 1896–1897, pp. 224–276. July, 1899.

pared paper consists of two parts, — I, 'The Bibliography of Kansas Ornithology' (pp. 224–244); II, 'An Historical List of Kansas Birds' (pp. 244–276). The first gives an annotated chronological list of books and papers containing references to the birds of Kansas, and includes also the titles of all papers on ornithology by Kansas authors, whether or not relating to Kansas birds. The list begins with the report of Pike's Expedition, published in 1810, and includes about two hundred titles, annotated to show their bearing upon Kansas ornithology, specifying also in each case the additions made to the list of Kansas birds. At the close a 'Recapitulation' indicates, in chronological order, the date and number of species added by the different authors.

Part II consists of a concisely and judiciously annotated systematic list of the birds of Kansas, numbering 351 species. In addition to a statement as to the character of the presence of each species in Kansas, there are historical notes, giving the date of the first record of the species for the State, and the authority therefor. As regards accuracy and completeness, this is doubtless one of the most carefully prepared State lists that has yet appeared, and has the additional feature of being also historical. It is fairly free from typographical errors, but is worthy of a better typographical setting, the technical names being printed in the same uniform type as the text, not only in the 'List' itself, but in the 'Bibliography,' which latter is also devoid of the special bibliographical marks commonly employed to designate the makeup of title pages, etc. But this, we are informed, is not the fault of the author, whose wish, as manifested in the preparation of the copy, was not only disregarded, but he was not even permitted by the State printer to revise the proof sheets! That so few errors have crept in is a sufficient guarantee that Prof. Lantz must have given the printers exceptionally well prepared copy, and indicates that the care and exhaustive research shown in the bibliographical and historical phases of the paper extended to the clerical details of composition. — J. A. A.

**The Goss Collection of Mexican and Central American Birds.** — As is well known, it was the habit of the late Col. N. S. Goss, during the later years of his life, to spend the winter season in some part of tropical North America. His first trip was to Guatemala in 1882, and his last, in 1889, to Nicaragua and Costa Rica. While he published very few of his observations, it was, we are told, "his ambition to have his collection contain representatives of every species of North American bird." The present paper,[1] compiled by Prof. Lantz, contains a list of his collections,

[1] A List of Birds collected by Col. N. S. Goss in Mexico and Central America. From the Collector's Notes; compiled by D. E. Lantz, Manhattan. Read before the Academy October 27, 1897. Trans. Kansas Academy of Science, 1896–1897, pp. 218–224. July, 1899.

with the number of specimens of each species and the locality of collection. The list numbers 256 species, and is preceded by a brief itinerary of Col. Goss's various collecting trips to Mexico and Central America. The occasional typographical errors are doubtless due to the fact that the author was not permitted to revise the proof sheets, as already explained above in the case of his 'Review of Kansas Ornithology.'—J. A. A.

**Cory's 'The Birds of Eastern North America. Water Birds. Part I.'**[1] —The tendency of the present day, in the production of popular bird books, seems to be to reduce the 'science of birds' to easy terms, in response to, and in stimulation of, the interest of late so generally manifested in out-of-door studies. The scope and character of these attempts to popularize bird study are as varied as their authors are numerous. In the present case we have a work that is not only elaborate in its pictorial details, simple in method if treatment, and comprehensive in scope, but also systematic and scientific in arrangement. It is constructed on much the same plan as the author's previous 'How to Know the Shore Birds' (1897), and 'How to Know the Ducks, Geese, and Swans' (1898), previously reviewed in this journal (Auk, XIV, 1897, 418, and XV, 1898, 278). 'That even he who runs may read,' a preliminary leaf facing the title page contains an 'Artificial Key to distinguish Land Birds and Water Birds,' which, in addition to the explanatory text, contains four cuts illustrating foot structure, and full-length figures of various species of Shore Birds, Gallinules, Rails, and Herons. A preface of two pages explains the use of the 'Keys,' following which is an elaborately illustrated 'Glossary' of terms used in describing the principal parts of a bird. In the 'Introduction' (pp. 3–7) the structure of the wing, tail, feet and bill are shown by aid of numerous cuts, and the technical terms used in describing these parts are carefully defined. (We must here note the strange lapsus of 'rectices' for rectrices occurring repeatedly on p. 4.) There are also diagrams and directions 'How to measure a Bird' (pp. 8, 9). Then follows an 'Index Key to Families' of the Water Birds, with 16 cuts, illustrating the structure of the foot in the various groups. From this general introductory matter we pass to the 'Key to Families' (including subfamilies), illustrated by cuts of bills and feet, heads, and small full-length figures, the key being based primarily on the palmation, position and number of the toes, the form and structure of the bill, and general size (pp. 11–24). The text is brief, the cuts occupying the greater part of the

[1]The Birds | of | Eastern North America | known to occur East of the Ninetieth Meridian | — | Water Birds | — | Part I | — | Key to the Families and Species | — | By | Charles B. Cory | . . . . [= 10 lines, titles and list of the author's principal works] | — | Special Edition printed for the | Field Columbian Museum, Chicago, Ill. | —1899—Sm. 4to, 1 l., pp. i–ix 1–142, profusely illustrated with halftone and line text cuts.

twelve pages devoted to the 'Key to Families,' which follow each other in arbitrary sequence. Then follows the 'Key to the Species' (pp. 25–130), arranged in systematic order from the Grebes to the Oystercatchers. Besides the numerous cuts of structural parts, as bill, feet, tail, etc., each species is figured, either full length or half length, to show the most characteristic parts, the illustrations occupying far more space than the text. This is limited to brief diagnoses, in which the distinctive features are emphasized by use of special type. In the case of the Ducks, head figures are given of both sexes of each species; and throughout figures are used to the fullest extent to which they could apparently be of use to the student.

With page 131 begins what will be apparently Part II of the work — a formal description of the Water Birds of Eastern North America, giving brief, nontechnical descriptions of each species in its various plumages, with an account of its geographical range, and nest and eggs, followed by a few lines, in larger type, devoted to the life history of the species. Though not so stated, pp. 131–135 are apparently given as a sample of the main text that is to follow.

The illustrations, by Mr. Edward Knobel, are well adapted to their purpose, though not always artistic. The small line drawings of bills and feet, etc., are very expressive, while the larger wash drawings of heads and full-length figures are in general graceful and effective, except where too much reduced in reproduction. The same figures are repeatedly used in different connections, some of the wash drawings, greatly reduced for use in the keys, appearing again on a larger scale in the body of the work.

With the analytical keys, based largely on size, and the prodigality of illustrations throughout the work, it would seem that the difficulty of identifying our Water Birds is reduced to its simplest terms, and that the author's hope that by the aid here furnished "the novice will be able to identify accurately any of our birds" is not too optimistic. — J. A. A.

**Knobel's 'Field Key to the Land Birds.'**[1] — This is another 'field book,' the purpose of which is "to enable any lover of birds, without previous knowledge or study of the subject, to identify readily any of our wild birds." The 'Field Key' consists of nine colored plates, 3¾ by 6 inches in size, on which about 150 species of the land birds of the northeastern United States are grouped *according to size*, the number and figures to a plate averaging about seventeen. The figures are fairly well drawn, and the size is not too small to permit the advantageous use of colors. In the present case, however, we cannot say the color results

[1] Field Key | to the | Land Bird | — | Illustrated | — | By | Edward Knobel | Boston | Bradlee Whidden | 1899 — 12mo, 3 ll., pp. 1–55, pll. i–ix, colored, and various text cuts. $1.75.

are satisfactory. While in a few instances there is some approach to accuracy, and, as a rule, the coloring is an aid to identification, there are many figures in which the coloring is so misleading as to defy an expert to guess what the figures were intended to represent. This is the more to be regreted since the plan of the book is such that the plates are designed to constitute the 'key.' As said, the figures are grouped on the plates according to size, and hence without regard to natural arrangement, while in the text the species are arranged in systematic order, from the Bob-white to the Bluebird, and numbered consecutively. As the same numbers are used on the plates, where their arrangement is heterogeneous, it is an oversight on the part of the author not to cite the plates in the text, and thus save his reader the trouble of hunting through the plates for the desired figure.

Mr. Knobel divides his birds on the basis of size into the following four categories: 1, 'Birds the size of a Crow or larger'; 2, 'Birds the size of a Robin or Jay, etc.'; 3, 'Birds about the size of a House Sparrow'; 4, 'Birds smaller than a House Sparrow'; the third group being further divided into: '*a*, bright colored; *b*, without speckles; *c*, brown with speckles.' We must thus look on plate V for No. 144 and on plate IX for 145, with no clue in the text to guide us in our search for the figures of our two species of Nuthatch.

The text consists of a short general description of each bird, followed by a varying amount, from two or three lines to half a page, of biographical information, all printed in uniform type, and as a continuous paragraph, with nothing to distinguish typographically the descriptive from the biographical matter.

The plan of the book is good, but the cheapness of its execution will go far to defeat its excellent purpose. If more care and expense had been devoted to the color printing, and a little more taste had been displayed in the production of the text, the book would doubtless have fully accomplished the author's purpose, and have proved a pleasing as well as useful contribution to the list of popular bird books. — J. A. A.

**Mrs. Miller's 'The First Book of Birds.'** — In the present work[1] we have a book prepared expressly for children by an author especially well-fitted for the task. "This book," says the author, "is intended to interest young people in the ways and habits of birds, and to stimulate them to further study. It has grown out of my experience in talking to schools. From the youngest kindergarten scholar to boys and girls of sixteen and eighteen, I have never failed to find young people intensely

[1] The First Book | of Birds | By Olive Thorne Miller | with eight colored and twelve | plain plates and twenty | figures in the | text | [Monogram] Boston and New York | Houghton, Mifflin and Company | The Riverside Press, Cambridge | 1899 — Square 12mo, pp. x + 150, pll. 20 (eight colored), and 20 text figures. $1.00.

interested so long as I would tell them about how birds live.... It has, therefore, seemed to me that what is needed at first is not the science of ornithology, — however diluted, — but some account of the life and habits, to arouse sympathy and interest in the living bird, neither as a target nor as a producer of eggs, but as a fellow-creature whose acquaintance it would be pleasant to make."

The book, it is needless to say, is couched in terms easily understood, and written in an attractive and sympathetic vein. It consists of thirty short chapters, grouped under the following four major headings — 'The Nestling'; 'The Bird grown up'; 'How he is made'; 'His Relations with us.' Under the first is treated not only the nest and the young bird, but its various changes of plumage, and how it learns to take care of itself, while under the third are given some elementary lessons on the structure of birds, etc. The twelve halftone and eight colored plates are very creditable reproductions of photographs of mounted birds and must add much to the interest and attractiveness of the book. Our only criticism is that they are copied from rather badly stuffed specimens with cheap artificial accessories, the excellence of the reproduction thus only heightening the defects of the tell-tale taxidermy. They hence lack artistic effect, which fact, perhaps, does not seriously detract from their utility as illustrations. — J. A. A.

**Stone on Birds from Bogota.**[1] — The small collection of birds forming the basis of this paper was made by the late Dr. J. W. Detwiller, in the vicinity of Bogota, in 1888–89. It contained 76 species, and as the exact localities of the specimens are indicated, it is of some importance in throwing light upon the distribution of the species. One, *Speotyto cunicularia tolimæ*, is described as new. Incidentally the South American forms of *Speotyto* and *Troglodytes* are reviewed, Mr. Stone recognizing five of the former and ten of the latter, of which eight belong to the *Troglodytes musculus* group. Mr. Stone has also described a new Cuckoo,[2] from the island of St. Andrews, West Indies, as *Coccyzus abotti*, nearly allied to *C. minor*, of which species it is apparently an insular form. — J. A. A.

**Chapman on New Birds from Venezuela.**[3] — A small collection of birds received recently at the American Museum of Natural History

[1] On a Collection of Birds from the Vicinity of Bogota, with a Review of the South American species of *Speotyto* and *Troglodytes*. By Witmer Stone. Proc. Acad. Nat. Sci. Philadelphia, 1899, pp. 302–313.

[2] A New Species of *Coccyzus* from St. Andrews. By Witmer Stone. *Ibid.*, p. 301.

[3] Descriptions of Five Apparently New Birds from Venezuela. By Frank M. Chapman. Bull. Am. Mus. Nat. Hist., Vol. XII, 1899, pp. 153-156. August 5, 1899.

from Mr. F. W. Urich, and by him gathered in the mountains of Venezuela, near San Antonio, proved to contain a number of new forms, which Mr. Chapman has described, as follows: (1) ***Setophaga verticalis pallidiventris***, (2) ***Chlorospingus (Hemispingus) canipileus***, (3) ***Mecocerculus nigripes***, (4) ***Mecocerculus urichi***, (5) ***Synallaxis striatipectus***. Several of these are very distinct from any species previously known. The *Synallaxis* belongs to the *S. terrestris* group, and is perhaps mostly nearly related to *S. carri* Chapm. from Trinidad. — J. A. A.

**Oberholser on Untenable Names in Ornithology.**[1] — Mr. Oberholser's paper treats of 36 generic names, and a few additional specific names, which he shows to be untenable through prior use in other connections. For 12 of these he is able to substitute other names already in existence for the groups in question, but for 24 of the genera entirely new names are here proposed. Fortunately only one of the challenged names relates to North American birds, namely, *Micruria* Grant, recently proposed for two species of Murrelets, previously currently referred to *Brachyrhamphus*. For *Micruria* Grant (type, *Brachyrhamphus hypoleucus* (Xantus) Mr. Oberholser proposes *Eudomychura*, the species thus standing as *E. hypoleucus* (Xantus) and *E. craveri* (Salvad.).

Lists of the species considered referable, respectively, to these 36 genera are given under the new generic designations. According to all recent codes of nomenclature, these preoccupied names are strictly untenable, and Mr. Oberholser has done good service in showing up their real status and providing for them proper substitutes. — J. A. A.

**Farrington on a Fossil Egg from South Dakota.**[2] — The specimen here described was discovered in the Bad Lands, near Dakota City, South Dakota, and is believed by the author to be "a petrified egg of an Anatine bird of Early Miocene age." Three photographic views of the egg, natural size, are given on pl. xx, showing its form and structure. The egg measures 2.03 × 1.49 in., and is very well preserved, distinctly showing the shell structure. The author has heard "of the finding of at least two other petrified eggs at different times in the same region," but has been unable to verify the reports or to see the specimens. — J. A. A.

**Gurney and Gill on the Age to which Birds Live.**[3] — In 'The Ibis'

[1] Some Untenable Names in Ornithology. By Harry C. Oberholser. Proc. Acad. Nat. Sci. Phila., 1899, pp. 201–216. June, 1899.

[2] A Fossil Egg from South Dakota. By Oliver Cummings Farrington, Ph.D., Curator, Department of Geology. Field Columbian Museum, Geology, Vol. I, No. 5, pp. 193–200, pll. xx, xxi. April, 1899.

[3] On the Comparative Ages to which Birds Live. By J. H. Gurney, F. Z. S. 'The Ibis,' Jan., 1899, pp. 19–42. Republished, with some revision, in 'The Osprey,' June, 1899, pp. 145–155.

for January, 1899, Mr. J. H. Gurney has brought together a large amount of authentic and interesting information on this subject, respecting which it is so difficult to obtain satisfactory records. The first nine pages of Mr. Gurney's valuable paper relate to the general subject, after which the Passeres, the Psittaci, Striges, Accipitres, Pelecanidæ, Ardeidæ, Anseres, and Diomedeidæ are passed in review with reference to the known facts regarding their longevity. Then follows a tabular statement of 144 cases, representing 75 species, giving the age and the authority for the record, with finally some comparison between the longevity of birds and mammals, and suggestions as to the points on which further information is needed. From the table it would appear that Thrushes live from 15 to 20 or more years (there is a record for the Nightingale of 25); Finches, from 14 to 23 years; Ravens (two cases), 50 and 69; Magpies and Crows, 17 to 28; Parrots and Macaws, 17 to 80; Owls, 18 to 68; Eagles, 20 to 56, etc. A domestic Goose has a record of 80 years, and a Collared Dove (*Turtur risorius*) of 40. These cases, of course, nearly all relate necessarily to birds held in captivity or in domestication, and hence living under more or less artificial conditions. These conditions we know are often unfavorable to the well-being of the captive, while, on the other hand, they may be exceptionally favorable to long life, in particular cases. On the whole, it is to be presumed, however, that a bird's chances for long life are rather better in a state of nature than in captivity, excluding the domesticated kinds.

This interesting subject has received further attention at the hands of Dr. Gill, who has not only reprinted Mr. Gurney's paper entire, "with some revision," in 'The Osprey' for June, 1899, but follows it with a long article of his own, entitled 'The Longevity of Birds and other Vertebrates.'[1] Dr. Gill considers the subject from the historical and theoretical side, in relation to certain hypotheses for determining the life of an animal, held by various authors, from Buffon and Flourens to Hollis and Bell, by the latter of whom the matter has been recently discussed in 'Nature' (January, March, and May of the present year). These hypotheses are based on the period of gestation, or of adolescence. Dr. Gill believes that there is an inherent fallacy in all the 'laws' thus far proposed, and that a rule which may hold good for some members or groups of a class will not admit of universal application for the whole class, and much less for all vertebrates. "It is evident," he says, "that there are no such ratios between the size of a bird and its duration of life, its period of embryological development, and its period of adolescence as prevail among mammals. Nevertheless, there are indications that there is a tendency at least towards an extension of the duration of life among some large birds, as those of prey, and towards the retardation of the development of the livery of perfect maturity. Even this,

[1] 'The Osprey,' Vol. III, June, 1899, pp. 157–160.

however, is not perfectly proved, and there are indications, on the other hand, that such tendencies may be a family or group habit."

As Dr. Gill remarks, the subject is one respecting which much more information is required before we can generalize with much degree of certainty. Mr. Gurney has led the way, with his admirable collection of facts, to which, it is to be hoped, many other data of similar character will be soon added. — J. A. A.

**Kellogg and Others on Mallophaga.** — The July number of 'The Auk' (pp. 232–236) contained a paper 'On Some Parasites of Birds,' by Prof. Vernon L. Kellogg of the Leland Stanford University. It may interest some of the readers of 'The Auk' to know that Prof. Kellogg and some of his fellow workers in this field have recently published several papers on the Mallophaga[1] of some of our western American birds, forming the third of a series of memoirs on this subject.[2] In this article of over 200 pages and sixteen plates, a large number of new species are described and figured, and others listed, with their hosts, which latter number over 100 species, representing nearly every family of the North American ornis. — J. A. A.

**Huntington's 'In Brush, Sedge, and Stubble.'** — Since our former notice of this work[3] in the January number of this Journal (*antea*, p. 89) Parts III to VII have been received, and fully warrant the praise bestowed upon Parts I and II. As the general character of the work has been already stated, it remains to add that Parts III and IV treat of the 'Grouse of the Woods and Mountain,' this subject being completed in Part V, which includes also the Turkeys, and some of the Pheasants (the species introduced into North America), the latter running over into Part VI. This part begins (at p. 85) the account of the 'American Partridges,' which also occupies the whole of Part VII. The text is a combination of ornithology and hunting experiences, and the illustrations are equally varied. The ornithological part consists of photographs of mounted specimens (often in series to show variations of plumage), of

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[1] New Mallophaga, III. Comprising Mallophaga from Birds of Panama Baja California and Alaska, by Vernon L. Kellogg, Professor of Entomology Leland Stanford Junior University. Mallophaga from Birds of California, by Vernon L. Kellogg and Bertha L. Chapman. The Anatomy of the Mallophaga, by Robert E. Snodgrass, Assistant in Entomology, Leland Stanford Junior University. Occasional Papers of the California Academy of Sciences, Vol. VI, 1889, pp. 1–224, pll. i–xvi.=Contributions to Biology from the Hopkins Seaside Laboratory of the Leland Stanford Junior University, XIX.

[2] Nos. I and II, by Professor Kellogg, were published in 1896.

[3] In Brush, Sedge, and Stubble, folio, Pts. III–VII, 1899. The Sportsman Society, Cincinnati.

birds in life, especially of birds on their nests, and photographic reproductions of original drawings. The scenic illustrations give not only hunting scenes, but views of picturesque localities, more or less related to the haunts of the birds. — J. A. A.

**Publications Received.** — **Chapman,** Frank M. Descriptions of Five apparently New Birds from Venezuela. (Bull. Am. Mus. Nat. Hist. XII, 1899, pp. 153–156.)

**Cory,** Charles B. The Birds of Eastern North America. Water Birds. Part I. Sm. 4to, Field Columbain Museum, Chicago, 1899.

**Farrington,** Oliver Cummings. A Fossil Egg from South Dakota. (Field Columbian Museum, Geol. Ser. I, No. 5, 1899.)

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**Huntington,** Dwight W. In Brush, Sedge and Stubble, Parts VI and VII, 1899.

**Knobel,** Edward. Field Key to the Land Birds. Illustrated. 12mo. Boston, Bradlee Whidden, 1899. $1.75.

**Lantz,** D. E. (1) A List of Birds collected by Col. N. S. Goss in Mexico and Central America. (Trans. Kansas Acad. Sci., 1876–77, pp. 218–224.) (2) A Review of Kansas Ornithology. (*Ibid.*, pp. 224–277.)

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**Schalow,** Herman, Einige Bermerkungen zur Vogelfauna von Spitzbergen. (Journ. f. Orn., July, 1899, pp. 375–386.)

**Stone,** Witmer. (1) A New Species of *Coccyzus* from St. Andrews. (Proc. Acad. Nat. Sci., Phila., 1899, p. 301.) (2) On a Collection of Birds from the Vicinity of Bogota, with a Review of the South American Species of *Speotyto* and *Troglodytes*. (*Ibid.*, pp. 302–313.)

**American** Jour. Sci., July–Sept., 1899.

**Anales** del Museo Nacional de Montevideo, II, fasc. 11, 1899.

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**Birds** and All Nature, VI, No. 2, Sept., 1899.

**Bulletin** Cooper Orn. Club, I, Nos. 4 and 5, 1899.

**Bulletin** Michigan Orn. Club, I, No. 2, 1899.

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**Naturalist**, The, A Month. Journ. Nat. Hist. for North of England, Nos. 510–511, Aug.–Sept., 1899.

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**Osprey**, The, III, No. 10, June, 1899; Vol. IV, No. 1, Sept., 1899.

**Ottawa** Naturalist, XIII, Nos. 4–6, July–Sept., 1899.

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**Wilson** Bulletin, No. 27, July, 1899.

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**Zoölogist**, The (4), Nos. 31–33, July–Sept., 1899.

## CORRESPONDENCE.

### The Proper Function of 'Binomials' and 'Trinomials.'

EDITORS OF 'THE AUK': —

*Dear Sirs:* — Without wishing to throw discredit upon the much abused second edition of the A. O. U. Check-List of North American Birds, I nevertheless feel called upon to draw attention to some inconsistencies contained therein, which indicate the present tendency to depart from some of the Canons of Nomenclature originally adopted by the Union.

I refer to the nomenclature of island forms. The A. O. U. Code distinctly makes "*intergradation* the touchstone of trinomialism," and

insular birds being obviously prevented from intergrading with mainland forms, ought to be uniformly provided with *binomial* names. Anyone who takes the trouble to examine the Check-List and the recent Supplements thereto will find that this custom is by no means followed out, as very many of the recently described insular forms from the California islands, which differ but slightly from allied mainland birds, appear as *trinomials*. In other words '*intergradation*' has been disregarded and '*degree of difference*' recognized as the criterion for deciding the specific or subspecific claims of a given form.

We have, for instance, *Carpodacus mcgregori* from San Benito and *Carpodacus mexicanus clementis* from Santa Barbara; *Aphelocoma insularis* from Santa Cruz, while the *Helminthophila* from the same island is *H. celata sordida*. The Guadalupe Island birds are, I believe, without exception, written as binomials, but the vast majority of the other insular birds which have been described recently are listed as trinomials.

In recent American mammalogy the tendency is in the other direction, and not only are all island forms, no matter how slightly differentiated, regarded as 'species' (*i. e.*, binomials), but many peninsular and other continental forms which may readily be expected to intergrade are treated in the same way. In fact, the tendency among our mammalogists seems to be to depart from trinomialism altogether.

This to my mind is much to be regretted, and will work irreparable damage to nomenclature. A trinomial name carries to the average student just twice the information that a binomial would under these circumstances. For instance, to one who is not conversant with every paper relating to modern mammalogy, how much more knowledge the name *Lynx canadensis subsolanus* conveys than *Lynx subsolanus*. The former indicates at once a race of the Canada Lynx, the latter leaves him in doubt whether the animal is related to the Canada Lynx or the Wild Cat (*L. ruffus*). It seems that some modification of the A. O. U. Canon relating to trinomials is desirable, especially as we seem to be deliberately violating it, but this can surely be effected without abolishing this extremely useful system.

Animal forms (using this term for any recognizable species or subspecies) are of four kinds: — (1). Those which exist side by side in the same area without intergradation as the Hermit and Olive-backed Thrushes. (2). Those which inhabit different areas and intergrade where the areas join. These are obviously modified from one far ranging form which is being broken up by different geographic environments. (3). Those which inhabit different areas, but which do not intergrade and are often separated by wide gaps. (4). Island forms which are often closely related to nearby continental forms, but are of course completely isolated.

By the A. O. U. Code trinomials can only be applied to forms coming under category (2), and all others are treated as binomials. By common usage in ornithology, however, we adopt trinomials for such forms under

(4) as show only a slight deviation from the allied continental type, and we also treat very many forms as trinomials which from lack of material we are undecided whether to place in (2) or (3).

Personal opinion *must necessarily* govern such cases, no matter what Code we set up, just as it must govern all cases where 'degree of difference' is adopted as our criterion. Considering the great diversity of custom at present, it seems to me time that we came to some definite agreement on the matter, and our practice shows that 'degree of difference' *must* influence us in certain cases.

To my mind (A), binomials should be applied to all forms which occur together without intergradation, no matter how slight the differences, and (B) trinomials, to geographic races which intergrade, or which differ so slightly that there is every probability of intergradation, and to slightly differentiated island forms. Only such geographic races should be considered as species (binomials) as are markedly different, and of the intergradation of which there is no probability. In other words, where intergradation is probable, give it the benefit of the doubt. This practice is nearly that followed by the A. O. U. Committee, but is at variance with that of many of our mammalogists, with whom the custom seems to be to call everything a species until intergradation is proven; which will speedily result in the adoption of a binomial name for every geographic variation — a most undesirable state of affairs and a distinct retrograde step in nomenclature.

WITMER STONE.

*Academy of Natural Sciences, Philadelphia.*

Sept. 6, 1899.

[Without at present attempting to discuss the question of the application of binomials and trinomials in its broader aspects, there is one fact in connection with the naming of insular forms which Mr. Stone and other writers[1] on this subject have apparently not considered. In challenging the propriety of giving a trinomial name to an insular form on the ground that the nature of its range renders geographical intergradation with its nearest ally impossible, they evidently have not given due allowance to the possibility of intergradation through individual variation.

Island forms, as all systematists know, because of their isolation are often separated on the basis of characters too slight to warrant similar action if they were inhabitants of the mainland. Hence it frequently happens that among a large series of a given form from a certain island there will be found a number of individuals indistinguishable from this form's representative on the mainland or on a neighboring island, and *vice versa*. Thus, for example, when we examine large series of *Pyrrhulagra noctis* or *Dendroica petechia* from the West Indies we find a complete intergradation of the extremes and, at the same time, average differences among the series from the different islands of sufficient importance to be recognized trinomially. — FRANK M. CHAPMAN.]

[1] *Cf.* William Palmer, The Nidologist, III, 1896, 91.

## NOTES AND NEWS.

THE SEVENTEENTH ANNUAL CONGRESS of the American Ornithologists' Union will be held in Philadelphia, in the Lecture Hall of the Academy of Natural Sciences, beginning on the evening of November 13, 1899. The evening session will be for the election of officers and members and the transaction of the usual routine business. Tuesday and the following days, the sessions will be for the presentation and discussion of scientific papers, and will be open to the public. Members intending to present communications are requested to forward the titles of their papers to the Secretary, Mr. John H. Sage, Portland, Conn., so as to reach him not later than November 8, in order to facilitate the preparation of the program of papers to be read at the Congress.

MAJOR JOSHUA L. FOWLER, 10th Cavalry, U. S. Army, an Associate Member of the American Ornithologist's Union, died on board the Steamer 'Ella' July 11, 1899, while returning home from Holguin, Cuba. The immediate cause of death was acute gastritis, but for sometime prior to leaving Holguin, where he was in command, he had had attacks of malarial fever, which probably weakened him and made him more susceptible to the graver disease.

Major Fowler was born at Fishkill, N. Y., February 20, 1846, and at the age of eighteen entered West Point. Graduating from the Military Academy he was assigned to the 2d U. S. Cavalry, June 15, 1868, promoted to captain in 1881, and remained with that regiment until July, 1898, when he became Major in the 10th Cavalry.. During these thirty years he was stationed at various army posts in Nebraska, Wyoming, Montana, California, Oregon, Washington, Arizona and Colorado where there was ample opportunity to study the birds. Although not a writer on ornithology, he was deeply interested in the subject, and more than one member of the Union was indebted to him for valuable assistance in procuring specimens and notes. Even at his new post in Cuba, where the duties were rather trying, he found time to write to an ornithological friend about the birds he saw from day to day.

He was a brave and conscientious soldier, universally beloved and respected by officers and men, an ideal husband and father, and a true friend. His frank, cheerful disposition, courteous manner and sound judgment, coupled with his extensive general knowledge, made him a great favorite, and one who will live long in the memory of a multitude of friends. A wife and son, Frederick Hall Fowler, also a member of the Union, survive him. — A. K. F.

MR. JOHN CORDEAUX, a Corresponding Member of the American Ornithologists' Union, died at his residence, Great Cotes House, Lincoln,

England, on the 1st of August, 1899, in his 69th year, after a short but painful illness. He was born on the 27th of February, 1831, at Foston Rectory, Leicestershire, and was the eldest son of the Rev. John Cordeaux, M. A., rector of Hoonton Roberts, Yorkshire. From a memorial notice by his friend and associate, Mr. W. Eagle Clarke ('The Naturalist,' Sept. 1899, pp. 277–279) we learn: "As a young man he went to live at Great Cotes, on the Lincolnshire bank of the Humber Estuary, and here he made for half a century those interesting and valuable observations on birds and their migratory movements which have not only made his name familiar to all British ornithologists, but also to those of Europe and America. . . . In the year 1873, Mr. Cordeaux published his 'Birds of the Humber District'—a book teeming with original observations on the birds resident and migratory of the district he had made so preëminently his own. . . . It is, perhaps, in connection with the interesting phenomenon of the migrations of our British birds that Mr. Cordeaux has come most into prominence. He was practically the founder of that elaborate and exhaustive enquiry which was undertaken by the British Association in 1880, in which year a committee of experts was appointed to investigate the subject of bird migration as observed on the coasts of Great Britain and Ireland. . . . During all this period—now well nigh on to twenty years—Mr. Cordeaux acted as Secretary to the Committee, a post which was no sinecure, especially during the years of the Committee's active existence, 1880–1887; and it is not too much to say that he was the life and soul of the enquiry, while in later years he has been the valued adviser of him who undertook to prepare the results of the investigation as a whole.

"Mr. Cordeaux had a competent knowledge in several other branches of natural history, especially as regards botany, mammals, and fishes. He filled, with distinction, the important office of President of the Yorkshire Naturalists' Union, and, on its formation in 1890, he was elected to the chief post of honour in the Lincolnshire Naturalists' Union as its first President. He was gifted with a graceful pen and a poetical imagination, and these contributed to make his writing peculiarly attractive. As a friend and a man it is impossible to speak in terms too high. He possessed a singularly charming personality, and was beloved by all who knew him, while his sterling worth and lofty principles won for him universal esteem. By his death a wide circle has lost a true and very dear friend, and British natural history an enthusiastic and accomplished devotee."

In the same number of 'The Naturalist' there is a much longer and more detailed tribute to his memory by the Rev. E. A. Woodruffe-Peacock.

VOLUME I, Number 1, of 'The Gulf Fauna and Flora Bulletin' bears date June, 1899. It is a bi-monthly octavo magazine, issued by the Louisiana Industrial Institute, Ruston, La., under the editorship of

Prof. W. Edgar Taylor. "Its aims are to encourage scientific research of a biologic nature. Its columns are open to all biologists, more especially investigators of the so-called Gulf section, broadly speaking." The first number, consisting of 48 pages, opens with a portrait and biographical sketch of the late Alvin W. Chapman, "educator, physician, author and botanist," and known to all botanists as the author of 'The Flora of the Southern United States.' In the varied contents of this issue we observe nothing ornithological, although ornithology must fall within its scope.

THE June number of 'The Osprey' makes the following editorial announcement: "Dr. Coues has retired from the editorship of THE OSPREY, and Dr. Gill, who had withdrawn his name from the April and May numbers, assumes control.... The publication will be resumed with the September number, and conducted in such a manner as not to infringe on the rights or feelings of others, and in harmony with all our scientific brethren. Care will be taken that the contributions to the magazine shall be worthy of a place in it, provision will be made for the exposition of the characteristic features of the avifauna of our new possessions in the Atlantic as well as Pacific oceans, and current news of interest to ornithologists will be given in the successive numbers. Pertinent illustrations will also be increased." We feel sure that this announcement will give sincere pleasure to the friends of 'The Osprey,' with whom we join in best wishes for its future prosperity and usefulness.

Since writing the above the first number of Volume IV, for September, has appeared, containing papers of more than usual interest, including one on the birds of Hawaii.

A NEW edition (vermehrte Auflage) of Gätke's 'Die Vogelwarte Helgoland' is now appearing in parts, to be completed in sixteen parts, under the editorship, as before, of Dr. R. Blasius, of which, through the editor's kindness, we have received the first six parts. It is published at one mark per part, or 16 marks for the completed work, by Joh. Hein. Meyer, Braunschweig.

WE HAVE also received the prospectus and the first two parts of Dr. Eugène Rey's 'Die Eier der Vögel Mitteleuropas,' to be issued in 25 monthly parts, with five colored plates to each part, giving a total of about 1200 figures. The work is large octavo in size, finely printed, and the plates are exceptionally fine. The price is two marks per part. The work is published by Fr. Eugen Köhler, Gera-Untermhaus, Russia.

Of the new edition of 'Naumann, Naturgeschichte der Vögel Mitteleuropas,' issued by the same publisher, 45 parts have already appeared, forming volumes II, V, and VI. The whole work will form twelve folio volumes, or 120 Lieferungen, at one mark per part. It is edited by Dr. Carl R. Hennicke, with the coöperation of a large number of the leading European ornithologists. Vol. V, now before us, treating of the Birds

of Prey, consists of 334 pages of text and 71 beautiful chromolithographic and 4 plain plates, and is altogether a most attractive and authoritative work. Like the original 'Naumann,' this cannot fail to mark an era in the history of European ornithology.

THE HARRIMAN scientific expedition to Alaska, mentioned in the July number of 'The Auk' (p. 302), successfully completed its work and returned about Aug. 1, as planned. Important discoveries were made in various departments of science, and it is proposed to publish in due time the scientific results of the expedition in two volumes, one to contain a general history of the expedition and the other the technical papers. A report on the mammals will be prepared by Dr. Merriam, and one on the birds by Mr. Ridgway and Dr. Fisher, other specialists also reporting for their respective departments. The volumes will be copiously illustrated, the cost of publication being generously defrayed by Mr. Harriman, who has spared no pains to make the expedition a success, both as a pleasure trip for his guests and as an expedition for scientific research.

WE LEARN through Mr. Frank S. Daggett, Vice-President of the Pasadena, Cal., Academy of Sciences, that "Mr. Joseph Grinnell, who joined a gold hunting expedition into the Kotzebue Sound region in the spring of 1898, for the purpose of extending his knowledge of west coast birds, has at last been heard from. The party wintered north of the Arctic Circle, several hundred miles up the Kowac River, and were ten and one half months without communication with the outside world. A fine series of skins of many species of birds was preserved, including summer and winter plumages, and young in all stages, besides nests and eggs of many rarities. Those who know of Mr. Grinnell's painstaking methods will look forward to his return and the appearance of his articles and photographs with much interest. The ice of Kotzebue Sound broke July 9, enabling their craft to pass south, through Berings Straits to Cape Nome, where they arrived three weeks later. Here Mr. Grinnell will continue investigations until late in September, touching at Ounalaska, Aleutian Islands, on the home trip."

AS WE go to press a meeting of the Hungarian and Austrian ornithologists is in session at Sarajevo, Bosnia, the meeting having been called for September 25–29. The program includes: (1) Report of the Hungarian Ornithological Central: (*a*) Exhibition of maps and tables with lectures on bird migration; (*b*) Proposal of coöperative methods for observing and elaborating the phenomena of migration. (2) Report of the Austrian Committee for Ornithological Observation Stations. (3) Report of the Museum of Sarajevo: (*a*) Maps and explanatory lecture on the migration of birds in Bosnia and Herzegovina; (*b*) Report on ornithological investigations in the Balkan States, illustrated by a fine

collection of birds from those countries. There will also be various excursions to nearby localities of special ornithological interest. The purpose of the meeting, as announced, is for the discussion of principles to be followed in the continuation of the great work on bird migration carried on at the large number of observation stations extending over a wide territory in Austria and Hungary, by the organizations here mentioned.

THE THIRD INTERNATIONAL ORNITHOLOGICAL CONGRESS will be held, under the patronage of the French government, from the 26th to the 30th of June, 1900, in the series of official congresses of the Paris Universal Exposition. This session has been organized under the direction of the Permanent International Committee named at the Second Congress, held at Budapest, in 1891. Important questions relating to the classification, habits, migrations, uses, breeding and acclimatation of birds form the matter of discussion and reports of the coming congress. The organizing committee is making every effort to insure the success of the congress by bringing together the chief naturalists of the world. The Honorary President is M. Milne-Edwards, Director of the National Museum of Natural History; the Acting President, M. Oustalet, the Secretary, M. de Claybrooke, and the Treasurer, Baron d'Hamonville, hold corresponding posts in the Permanent International Committee. In the Comité de Patronage, comprising foreign specialists adjoined to the French organizing committee, there are the following American members: Messrs. W. Brewster, Cambridge, Mass.; Elliott Coues, Washington; D. G. Elliot, Field Columbian Museum, Chicago; Clinton Hart Merriam, Department of Agriculture, Washington; Harry C. Oberholser, Biological Survey, Department of Agriculture, Washington; Robert Ridgway, Smithsonian Institution, Washington; R. W. Shufeldt, Washington; and Dr. L. Stejneger, Smithsonian Institution, Washington.

There will be admitted as members of the congress all delegates of French and foreign governments, and those who pay the subscription fee of twenty francs. Zoölogical societies and societies of acclimatation, aviculture, and for the protection of animals, may be represented by one or more delegates, the subscription being due for each delegate. Each member will receive the printed proceedings of the congress, and only members will have the right of taking part in the sessions and visits which are being prepared by the organizing committee.

The work of the congress has been divided among five sections, as follows:

I. Systematic ornithology — classification; description of new genera and species; nomenclature. Anatomy and embryogeny of birds. Palæontology; classification, description of new genera and species; ancient faunas, relations of extinct to present species.

II. Geographical distribution of birds. Present faunas. Species extinct

in historic times. Migrations. Accidental changes of place. Appearance of rare species in certain districts.

III. Biology — Habits — Diet — Nesting. Oölogy.

IV. Economic ornithology — protection of species useful to agriculture; destruction of harmful species, hunting. Acclimatation. Aviculture.

V. Organization and working of the international ornithological committee. Election of new members. (This section is especially reserved for members of the permanent international committee.)

Papers on the subjects of the program which have been accepted by the committee will be discussed in general session. Questions outside the program may be submitted to the respective sections. All papers must be in the hands of the organizing committee, at least in the summary form containing the conclusions reached, before the 1st of May, 1900. Communications may be made in English, German, and Italian, as well as French; but the publications of the congress will be limited to the French language. Minutes of each meeting will be printed and distributed at once. After the close of the congress a volume of proceedings containing the papers presented to the congress will be published under the direction of the committee. Correspondence relating to the ornithological congress should be addressed to the secretary of the organizing committee, M. Jean de Claybrooke, 5 rue de Sontay, Paris.

**Erratum.** — In 'The Auk' for January the change of a single letter in the eighth line from the top of page 78 exactly reverses the meaning of the sentence: "the true Swifts, Macropterygidæ," should of course read Tree Swifts. — F. A. Lucas.

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## ERRATA.

Page 21, line 14 from top, for true frog read tree frog.

Page 78, line 8 from top, for true Swifts read Tree Swifts.

" 236, after the title of the paper on the Prothonotary Warbler, insert, By Thomas S. Roberts.

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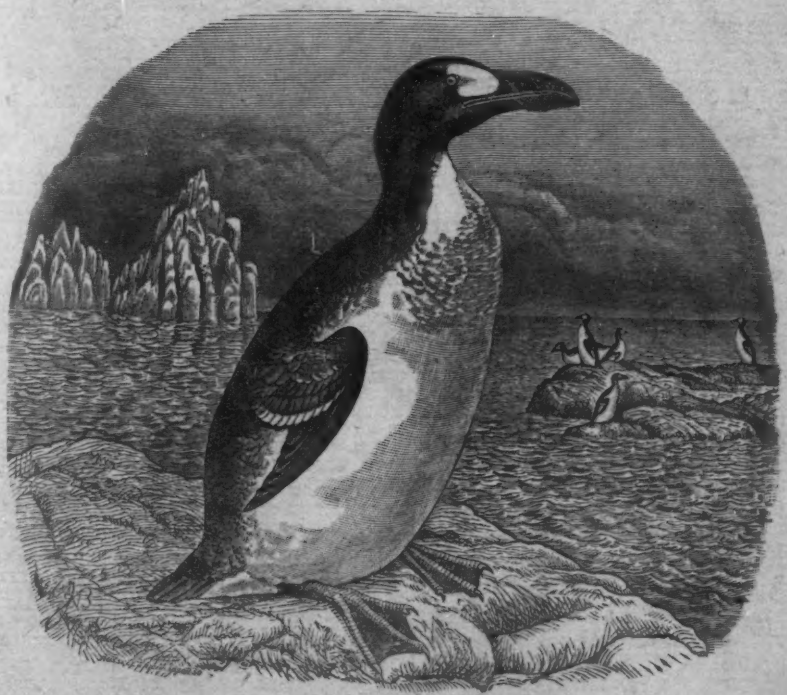

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